Model AD1273 CobraDome
Indoor Surveillance Unit

Installation and Operation Instructions

This manual describes the installation and maintenance procedures for the American Dynamics Model AD1273 CobraDome Indoor Surveillance unit. Before installation, become familiar with all of the special features and warnings associated with this equipment. Once installation is complete, store this manual in a safe, convenient location for future reference.

The software/firmware furnished with this equipment is confidential to, and copyrighted by, AMERICAN DYNAMICS. It is not to be copied or disclosed in any manner without the express written consent of AMERICAN DYNAMICS. The software/firmware is furnished to the purchaser under a license for use on a single system.

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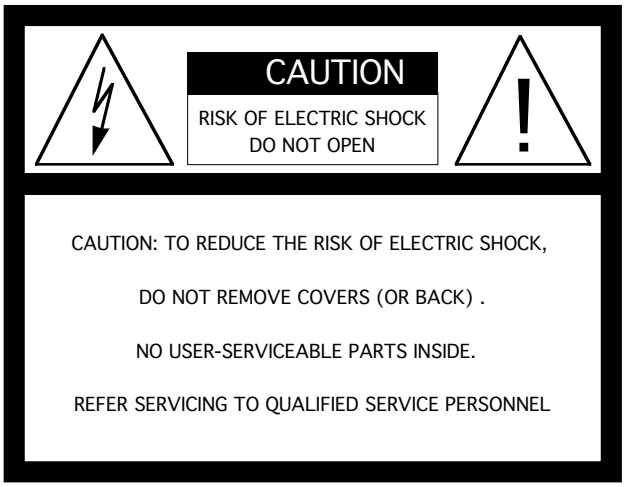
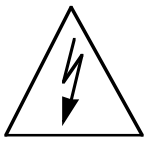
AMERICAN DYNAMICS

The installation of this product should be made by qualified service personnel and should conform to all local codes.





The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

WARNING

To reduce the risk of fire or shock hazard, do not expose this product to rain or moisture.

Warning: This product generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instructions manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this product in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

UNPACKING AND INSPECTION

Unpack carefully. This is an electronic product and should be handled as such. Compare the items received with the packing list with your order.

Be sure to save:

1. The shipping cartons and insert pieces. They are the safest material in which to make future shipments of the product.
2. The IMPORTANT SAFEGUARDS sheet.
3. These Installation and Operating Instructions.

MAINTENANCE

User maintenance of this unit is limited to external cleaning and inspection. For specific recommendations refer to the IMPORTANT SAFEGUARDS sheet packaged with this product.

INSTALLATION AND SERVICE

If you require information during installation of this product or if service seems necessary, contact the American Dynamics Repair and Service Department at (800) 442-2225. You must obtain a Return Authorization Number and shipping instructions before returning any product for service.

Do not attempt to service this product yourself. Opening or removing covers may expose you to dangerous voltages or other hazards. Refer all servicing to qualified personnel.

QA301C

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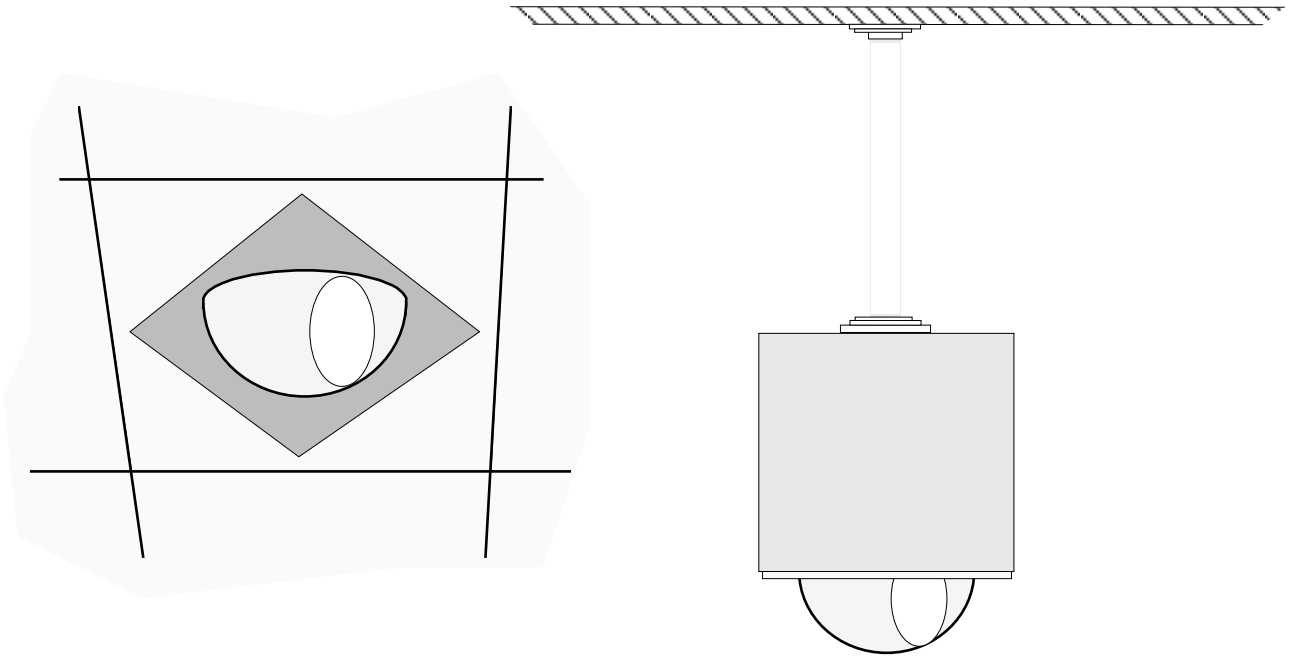


Figure 1 - AD1273 CobraDome Indoor Surveillance Unit in Drop Ceiling

DESCRIPTION

The AD1273 CobraDome Indoor Surveillance unit is designed for applications requiring a precision, high-speed pan/tilt mechanism with a variety of options. The standard AD1273 CobraDome is shipped ready for either drop-ceiling or hard mounting. Optional kits are available for a) converting to a pendant mount, and for b) replacing the original ceiling tile with a 2 ft. x 2 ft. pre-cut aluminum tile in a drop ceiling mount.

Standard AD1273 Model: The standard AD1273 is available with a factory-installed color or black and white camera viewing through an auto-iris 10X motorized zoom lens with manual override. The standard lower dome is made of optical quality acrylic plastic, with a smoked finish and a clear viewing slot.

Pan/Tilt Drive: High precision, gold contact slip-rings provide a smooth, continuous 360° rotation with instant reversal, precise tracking, and accurate target acquisition. The dome drive mechanism provides smooth acceleration and quiet camera movement with drift-free braking. Spring-loaded, quick-disconnect mechanical couplings and wiring connectors ease installation (or removal) of the pan/tilt chassis from the dome housing.

Automation: Automatic control of pan/tilt speeds in relation to zoom position is provided. Operating the AD1273 with an American Dynamics Matrix Controller allows definable dwell times for each of the 64 (maximum) programmable presets.

ROUTINE MAINTENANCE

Clean the lower dome outer surface with a non-abrasive cleaning cloth and cleaning agent that is safe for use on acrylic plastic.

- Always handle the lower dome from the outside circular flange.
- Wipe the smoked lower dome with a clean, damp cloth.

COMPONENT IDENTIFICATION

CHASSIS HOUSING

The **CHASSIS HOUSING** contains the major components of the AD1273 CobraDome. Also, all mounting hardware is attached to the **CHASSIS HOUSING**.

Aluminum Tile The **Aluminum Tile** is used in drop ceiling installations. In a 2' x 2' grid, it replaces the ceiling tile entirely. In a 2' x 4' grid, it replaces half of the standard tile and comes with a length of T-rail to support the seam between the two half tiles (see Figure 2).

Fascia Plate The **Fascia Plate** provides a neat appearance to the bottom of the CobraDome in drop ceiling or pendant mount installations. The **Fascia Plate** attaches to the **CHASSIS HOUSING** via four ball-and-socket snap connectors.

Trim Ring The **Trim Ring** provides a neat appearance to the bottom of the CobraDome in drop ceiling or hard-mount installations where a hole was cut in the existing ceiling.

Corner Brackets Four **Corner Brackets** bolt to the **CHASSIS HOUSING** and provide additional support when mounted in a dropped ceiling grid.

Safety Hook A **Safety Hook** bolts to the top of the **CHASSIS HOUSING** to provide primary safety against the **CHASSIS HOUSING** falling during normal service or unrelated building conditions. A suitable chain or cable must be strung between the **Safety Hook** and a solid location on the upper building structure.

NOTE: The **Safety Hook** is not to be confused with the **Safety Cable** described in the **CHASSIS ASSEMBLY** section.

CHASSIS ASSEMBLY

The **CHASSIS ASSEMBLY** contains all the camera/lens hardware, the pan/tilt motors and gears, the on-board electronics, and the power supply.

PCB Cover The **PCB Cover** is bolted to the top of the **CHASSIS ASSEMBLY** and serves as a protective cover for the AD1273 printed circuit board and power supply. The **PCB Cover** also serves as a connection point for a safety cable between the **CHASSIS ASSEMBLY** and the **CHASSIS HOUSING** (see Figure 2).

Wheel Switches Two **Wheel Switches** mounted on the printed circuit board permit setting the individual CobraDome identification numbers.

DIP Switch One eight position **DIP Switch** mounted on the Printed Circuit Board configures the CobraDome for Black/White or color operation, NTSC or PAL operation, motorized lens operation, and Auto-Line Control operation.

Lower Dome The **Lower Dome** mounts to the **CHASSIS ASSEMBLY** and provides cover to the camera lens.

Safety Cable The **Safety Cable** connects between the **PCB Cover** and the **CHASSIS HOUSING** as a backup safety to prevent the chassis falling during normal service operations or unrelated building conditions.

7-Pin Connector The **7-Pin Connector** routes the incoming Data and 24VAC Power wiring harness to the CobraDome printed circuit board.

BNC Connector The **BNC Connector** routes the outgoing video signal.

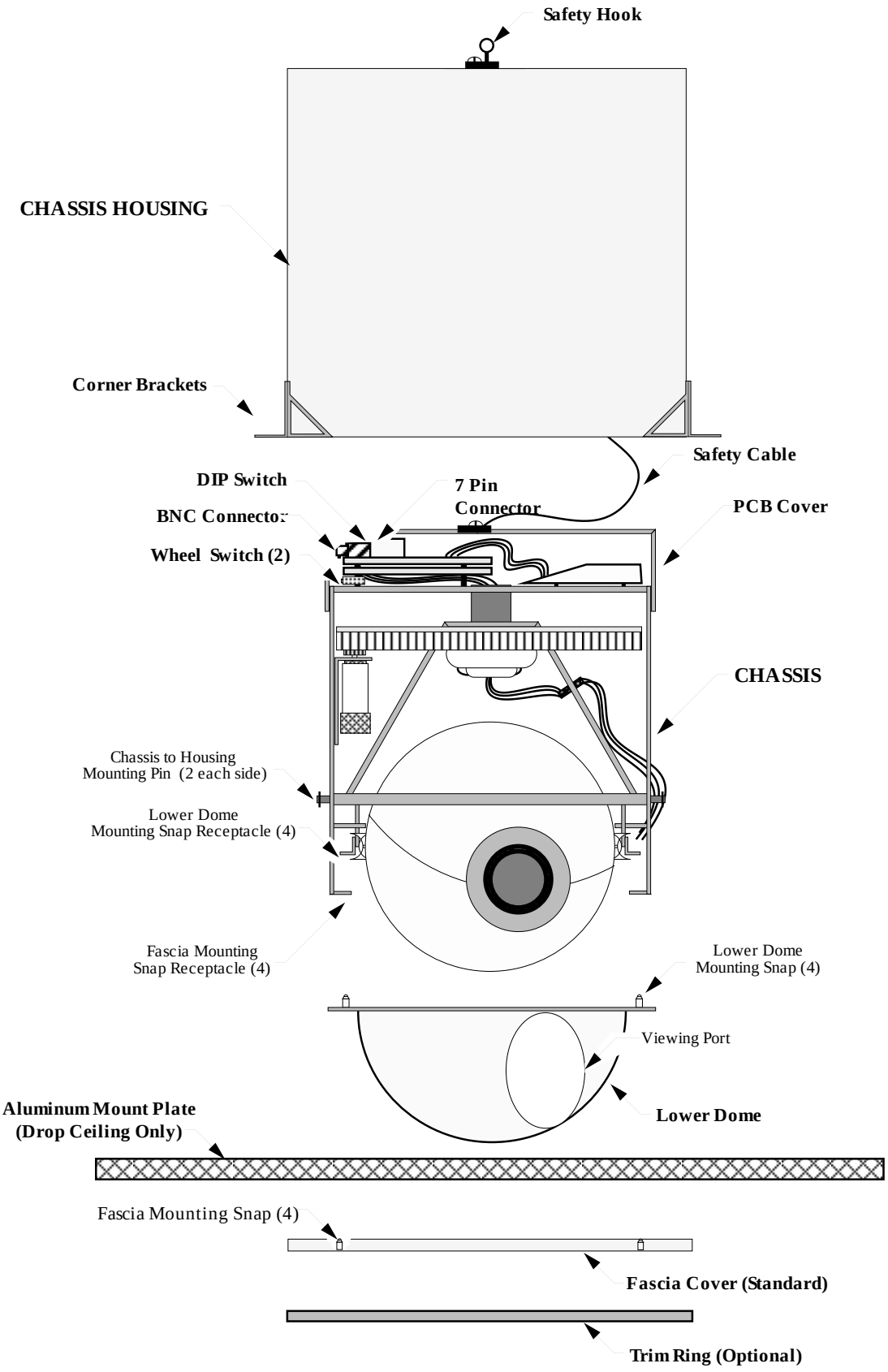


Figure 2 - Major Component Identification

SETUP

This section describes the required settings for proper operation of the AD1273. Before installing the AD1273, determine the intended operating requirements and set the related switches accordingly.

Control Switches

An 8-position DIP switch configures each dome for the particular user-selected hardware. Two thumbwheel switches identify the specific dome location within a Matrix Switching System.

Both thumbwheel switches and the 8-position DIP switch are mounted to the printed circuit board located on top of the chassis (see Figure 3).

NOTE: Verify all switch positions before installing the chassis into the chassis housing.

8-Position DIP Switch

An 8-position DIP switch labeled S1 configures each dome to the particular type of hardware. The DIP switch is configured at the factory, and only needs to be verified prior to installation. The DIP switch is mounted to the printed circuit board on top of the chassis frame (see Figure 3).

DIP switch positions and functions are described below and in Table 1.

DIP Switch 1 - Set switch #1 in the **OFF** position for a **COLOR** camera and the **ON** position for a **BLACK/WHITE** camera.

DIP Switch 2 - Set switch #2 in the **OFF** position if using **NTSC** standards and the **ON** position for **PAL** standards.

DIP Switch 3 - Set switch #3 in the **OFF** position to **ENABLE** the motorized lens and the **ON** position to **DISABLE** the motorized lens.

DIP Switch 4 - Set switch #4 in the **OFF** position to **ENABLE** the ALC and the **ON** position to **DISABLE** the ALC.

NOTE: The ALC default is **OFF.**

DIP Switch 5 - Set switch #5 in the **OFF** position to **ENABLE** the LINE-LOCK and the **ON** position to **DISABLE** the LINE-LOCK.

NOTE: The LINE-LOCK default is **OFF**.

DIP Switch 6 - Not used.

DIP Switch 7 - Not used.

DIP Switch 8 - Not used.

Table 1 - DIP Switch Positions and Related Functions

Switch Function	DIP Switch Number	DIP Switch ON	DIP Switch OFF
Camera Selection	**1**	B/W Camera	Color Camera
Video Type	**2**	PAL	NTSC
Motorized Lens	**3**	Disabled	Enabled
Automatic Light Control (ALC)	**4**	Disabled	Enabled
Line Lock	**5**	Disabled	Enabled
Not Used	**6**	N/A	N/A
Not Used	**7**	N/A	N/A
Not Used	**8**	N/A	N/A

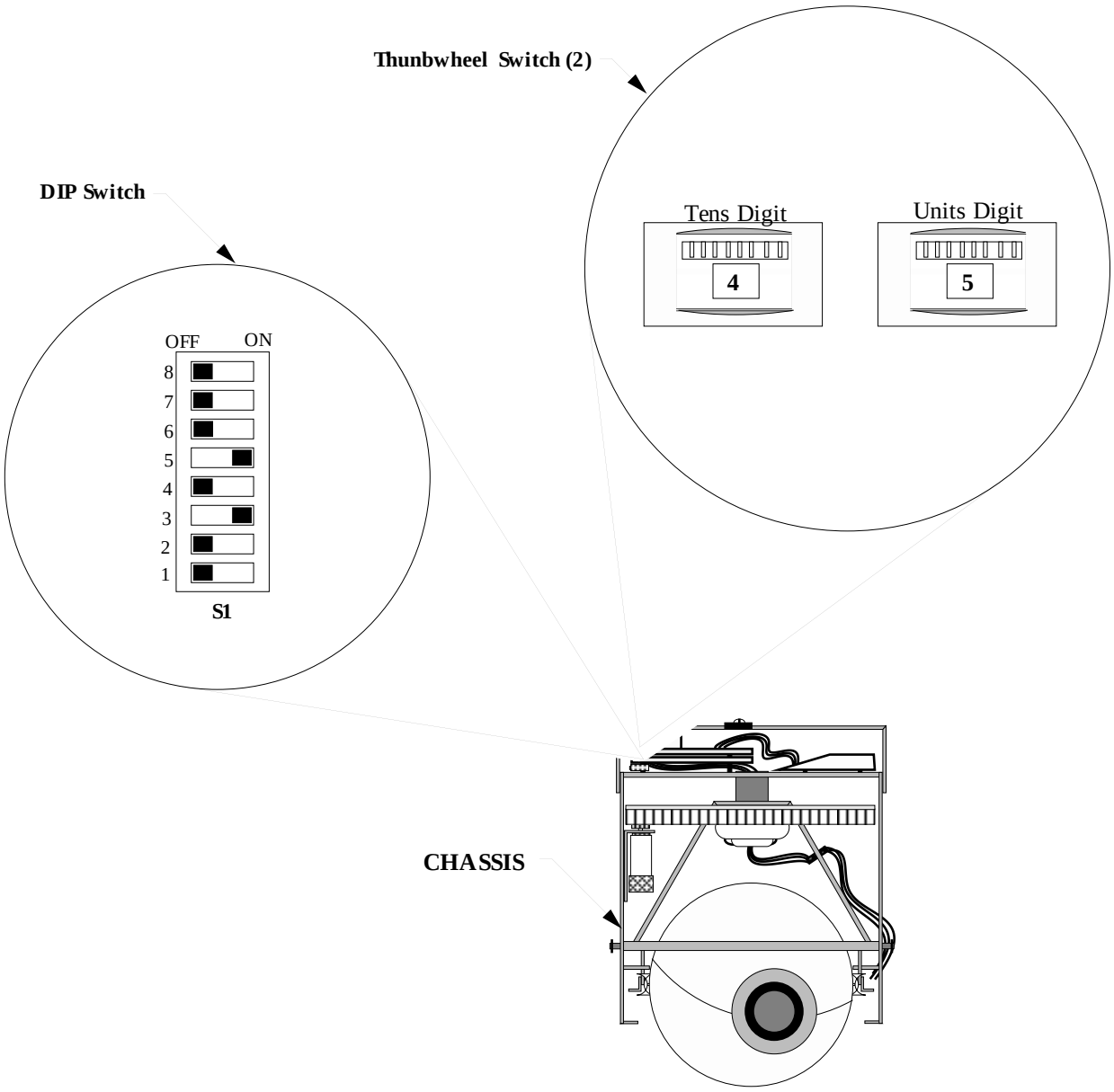


Figure 3 - DIP Switch Setting Locations

Camera Number Assignment

For individual control of camera pan/tilt functions by a matrix switching system, an individual camera number must be assigned to each AD1273 unit. Two thumbwheel switches, located on the printed circuit board, identify the camera number for each AD1273 (see Figure 4).

NOTE: Valid identification numbers on the thumbwheel switches are 1 - 64 **only**. Switches reading zero-zero (00) and 65 - 99 are not valid numbers.

Units Digit: Set identification numbers ZERO through NINE with the Units switch.

Tens Digit: Set identification numbers TEN through SIXTY with the Tens switch.

***EXAMPLE*:** Camera Identification Number is 45.
Set Units switch to five (5).
Set Tens switch to four (4).

Camera Number Sequencing

For systems containing more than 64 cameras, camera number assignment is determined by **GROUP**ing the cameras into blocks and then determining a particular camera number within that **GROUP**.

In this case, a **GROUP** contains 64 cameras (the thumbwheel switches on the AD1273 can be set for 1-64 only). A data distributor in the switching system routes the control signals to the proper **GROUP** of cameras.

Table 2 identifies which **GROUP** a specific camera number belongs to.

Table 2 - Camera-to-GROUP Number Relationship

Camera Numbers 1-64.....GROUP # 1
Camera Numbers 65-128.....GROUP # 2
Camera Numbers 129-192.....GROUP # 3
Camera Numbers 193-256.....GROUP # 4
Camera Numbers 257-320.....GROUP # 5
Camera Numbers 321-384.....GROUP # 6
Camera Numbers 385-448.....GROUP # 7
Camera Numbers 449-512.....GROUP # 8
Camera Numbers 513-576.....GROUP # 9
Camera Numbers 577-640.....GROUP # 10
Camera Numbers 641-704.....GROUP # 11
Camera Numbers 705-768.....GROUP # 12
Camera Numbers 769-832.....GROUP # 13
Camera Numbers 833-896.....GROUP # 14
Camera Numbers 897-960.....GROUP # 15
Camera Numbers 961-1024.....GROUP # 16

Setting Camera Number Thumbwheel Switches

All possible thumbwheel switch settings for the AD1273, along with the associated **GROUP** numbers, are listed in the Appendix (see pages A4 through A10 - **Camera Number Sequence Tables**).

To specify the correct thumbwheel switch settings and **GROUP** number;

1) Confirm the camera number.
2) Locate the **GROUP** for that camera (see Table 2).
3) Locate that **GROUP** in the Appendix (pages A4-A10)
4) Locate the camera number within the appropriate **GROUP**.
5) Set the thumbwheel switches to the corresponding Tens and Units digits.
6) Set the **GROUP** number on the Data Distributor. Refer to the data distributor installation manual for the **GROUP** identification setting procedure.

Table 3 gives an example of the **Camera Number Sequence Tables** found in the Appendix.

Table 3 - Camera Number Sequence Table Example

Camera Number	Switch Setting		
	Tens	Units	
1	0	1	Group 1
2	0	2	Group 1
3	0	3	Group 1
201	0	9	Group 4
202	1	0	Group 4
203	1	1	Group 4
385	0	1	Group 7
386	0	2	Group 7
387	0	3	Group 7
388	0	4	Group 7

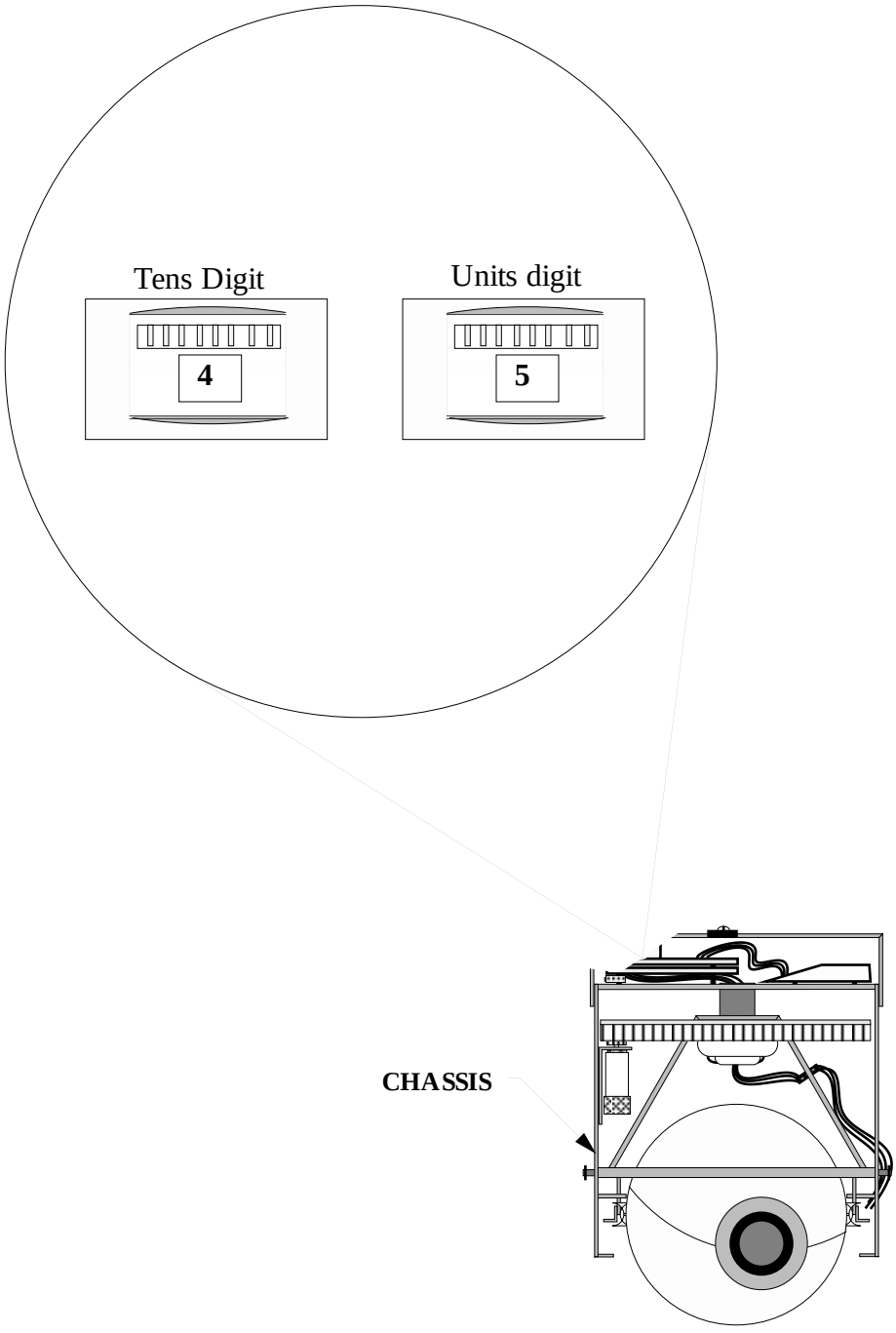


Figure 4 - Camera Identification Thumbwheel Switches

Dome Configurations

When using the AD1273 with other domes in a security system, determine the type of configuration that best suits the particular application.

Star Configuration

A star configuration refers to the direct hardwiring of one AD1273 unit to one outlet port of a data distribution unit. A star configuration limits the number of AD1273 units to the available number of outlet ports on the data distribution unit. Each AD1273 unit is equipped with a 120-ohm resistor to provide a low impedance termination to the data lines between the AD1273 and the data distribution unit (see Figure 5).

Daisy Chain Configuration

A daisy chain configuration triples the number of AD1273 units wired to each outlet port of a data distribution unit (see Figure 6). A maximum of three AD1273 domes may be daisy chained on a single data line.

When using the AD1273 in a daisy chain configuration, a jumper connecting a 120-ohm terminating resistor must be removed from all but the last dome in the chain (see Figure 6). Eliminate the termination by removing jumper J2 (see Page 9) on the printed circuit board mounted to the AD1273 chassis.

NOTE: Retain the 120-ohm termination for the last dome in the chain.

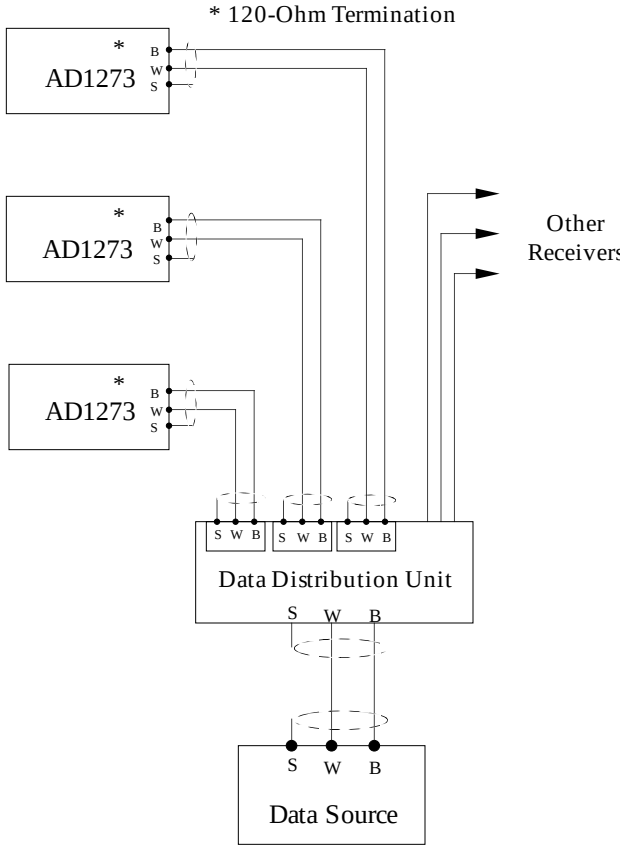


Figure 5 - Star Configure Connection

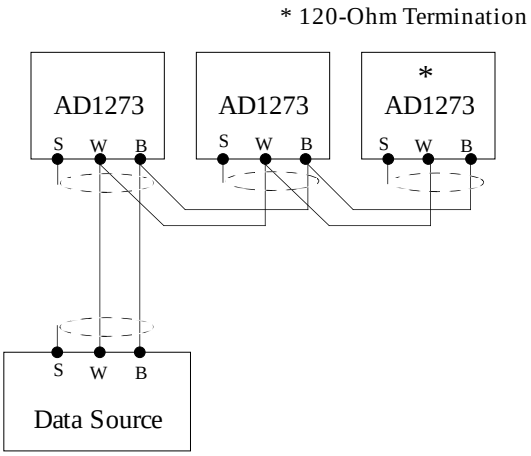


Figure 6 - Daisy Chain Connection

Jumper Removal

To remove the J2 jumper from the AD1273 printed circuit board:

CAUTION
Due to the presence of non-insulated components with hazardous voltages, the following adjustments should be performed by qualified service personnel.

1) Disconnect all data, video, and power connections from the dome.
2) Remove the chassis from the chassis housing.
3) Remove the four PCB cover retaining screws.
4) The jumper (labeled J2) is located to the left of pin number one on the 7-Pin connector attached to the PCB (see Figure 7).
5) Gently remove the jumper and store in a safe location.
6) Reassemble the dome in the reverse order of the disassembly.

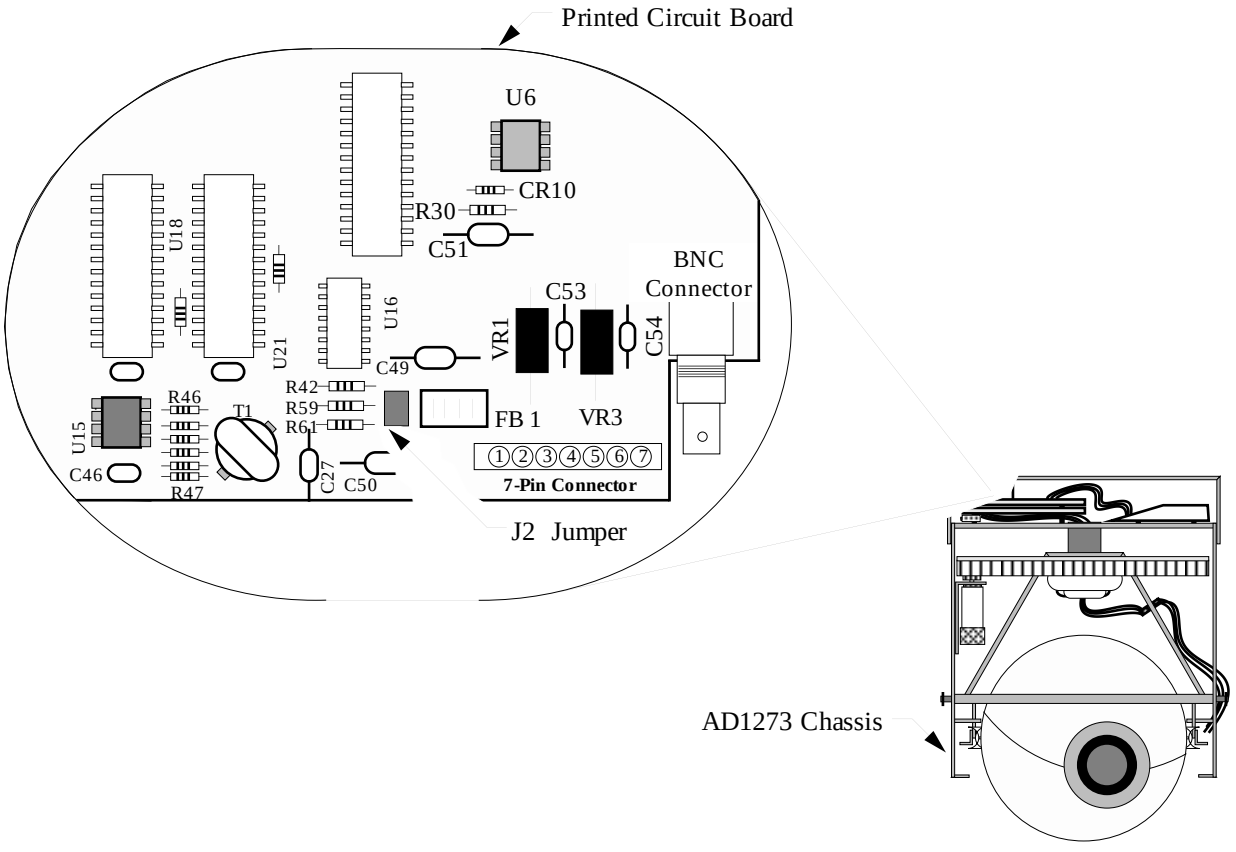


Figure 7 - Jumper Location

CONNECTIONS

Data Line Connections

Data line connections to the AD1273 are made with user-supplied, 2-wire twisted pair, shielded, Belden 8760 or equivalent (Plenum 88760). The maximum data line length is 5000 feet (1524m).

Data lines enter the AD1273 through a 7-pin Plug and Ramp connector unit (see Figure 8). The 7-pin Ramp connector is attached to the AD1273 printed circuit board. The 7-pin Plug mating connector is shipped with the AD1273 unit.

Assemble the 7-pin Plug connector by inserting the appropriate data lines into the corresponding pin slots listed in Table 4 and tightening the hold-down screws.

Table 4 - Data Line Connections to 7-Pin Plug Connector

- Pin 1 - Data line **SHIELD (S)**
- Pin 6 - Data line **WHITE (W)** wire
- Pin 7 - Data line **BLACK (B)** wire

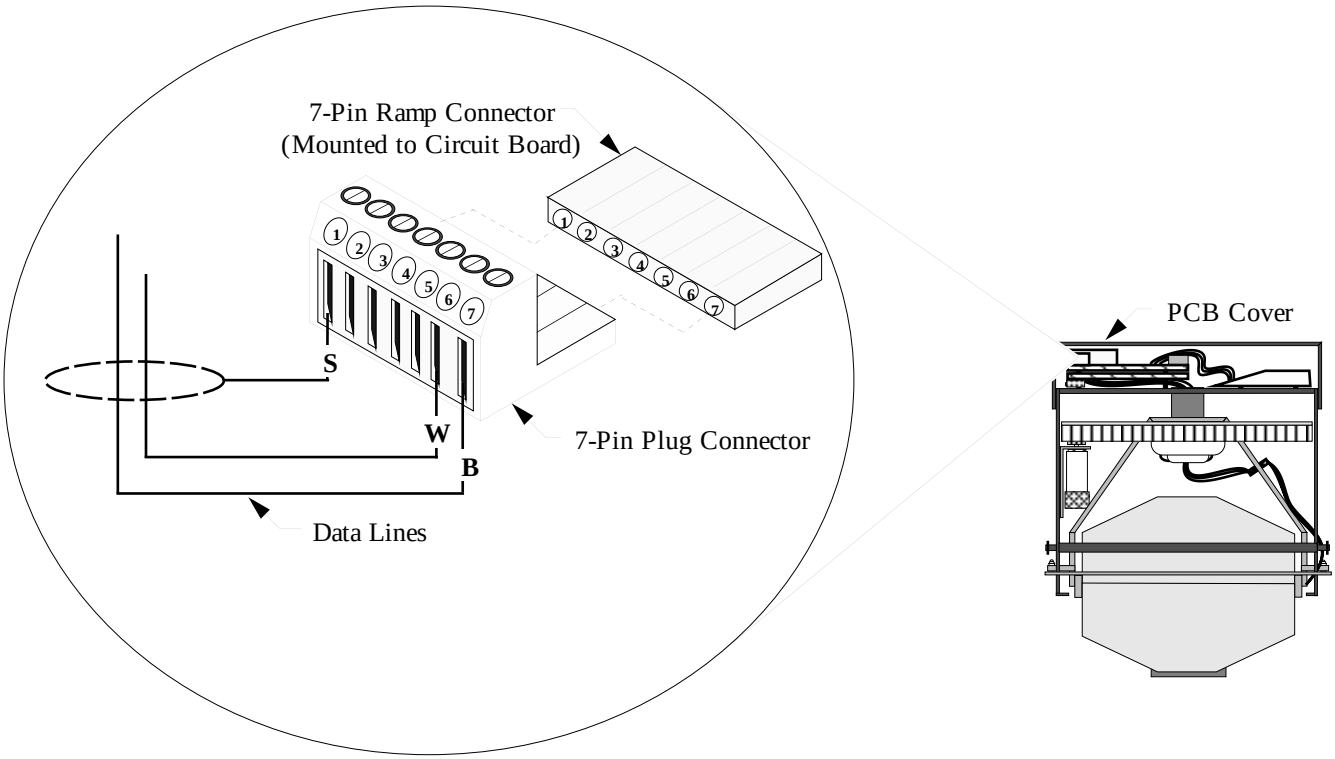


Figure 8 - Data Line Connections

Power Connections

The 24VAC power lines enter the AD1273 through a 7-pin Plug and Ramp connector (see Figure 9). The 7-pin Ramp connector is mounted to the printed circuit board. The 7-pin Plug mating connector is shipped with the AD1273 unit.

Assemble the 7-pin Plug connector by inserting the appropriate 24VAC power and ground lines into the corresponding slots listed in Table 5 and tightening the hold-down screws.

Table 5 - 24VAC Power Lines to 7-Pin Plug Connector

- Pin 3 - **24VAC INPUT** power signal
- Pin 4 - Dome chassis **GROUND**
- Pin 5 - **24VAC INPUT** power signal

Wire Selection

Table 6 lists the wire gauge versus maximum distance allowed between the AD1273 pan/tilt and the voltage source. Shielded cable is recommended for most applications.

Note: Distance calculations are based on solid copper wire, single common, and worst case current draw (i.e., diagonal pan/tilt operation).

Table 6 - Wire Gauge -vs- Distance

22AWG	20AWG	18AWG	16AWG
89ft	142ft	226ft	359ft
27.1m	43.3m	68.9m	109.4m

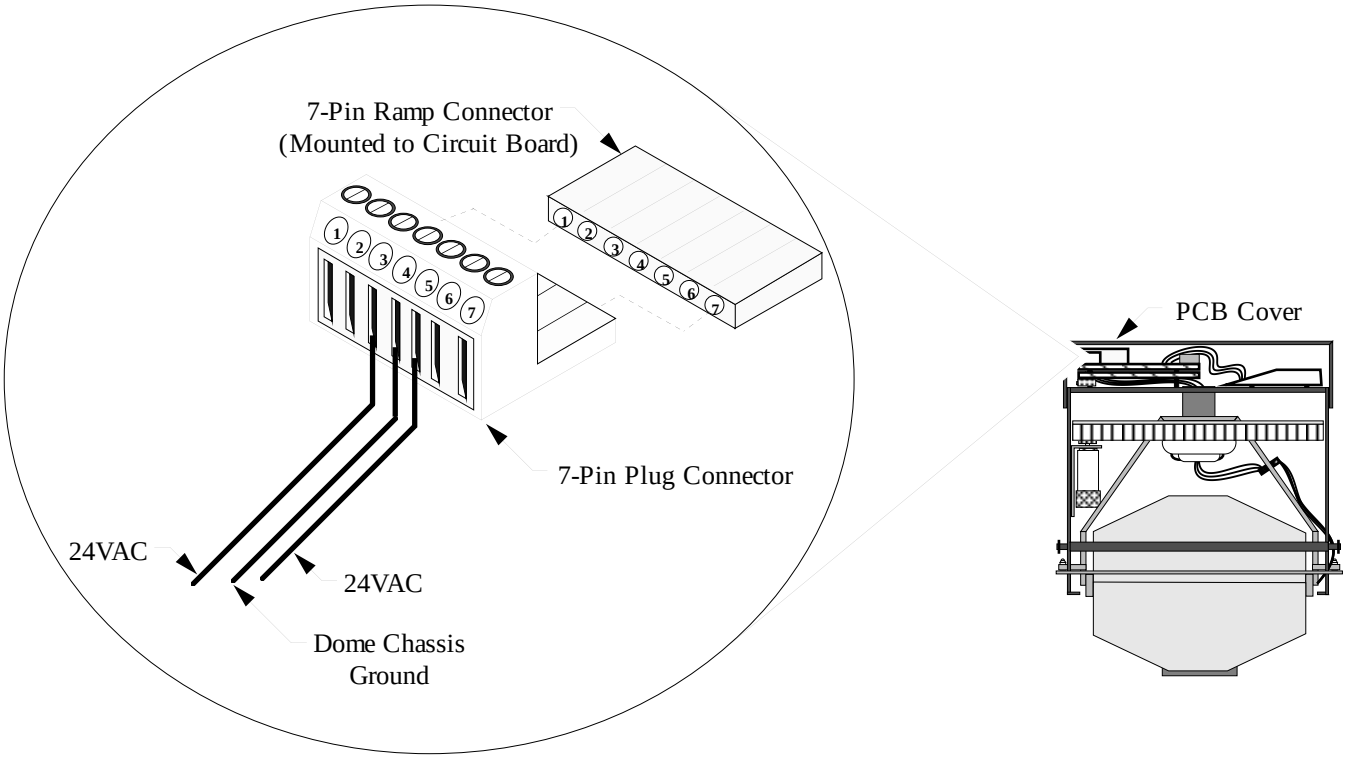


Figure 9 - Power Connections

INSTALLATION

Drop Ceiling Mount

The weight of the AD1273 unit requires additional support of the dropped ceiling grid. This additional support provides a stable, vibration free platform and ensures that the unit not move during unrelated repairs to the ceiling.

Before installing the AD1273, strengthen the ceiling grid by affixing four (minimum) lengths of bailing wire from the corners of the grid T-rails to the building frame directly above the AD1273 installation site (see Figure 11). Cut these support wires to a length such that no slack exists between the building frame and the ceiling grid.

One safety hook is provided with the AD1273 for connecting a safety chain between the building frame and the chassis housing (see Figure 11). This chain prevents the AD1273 from falling should anything happen to the ceiling grid. Cut the safety chain to a length such that no slack exists between the building frame and the chassis housing.

NOTES: For a 2 ft. x 2 ft. ceiling grid, an optional, precut aluminum tile houses the AD1273 assembly and replaces the original tile.

For a 2 ft. x 4 ft. ceiling grid, an optional, precut aluminum tile houses the AD1273 assembly. The original 2 ft. x 4 ft. tile must be reduced to a 2 ft. x 2 ft. tile. A two-foot T-rail is provided to support the seam between the aluminum tile and the original tile.

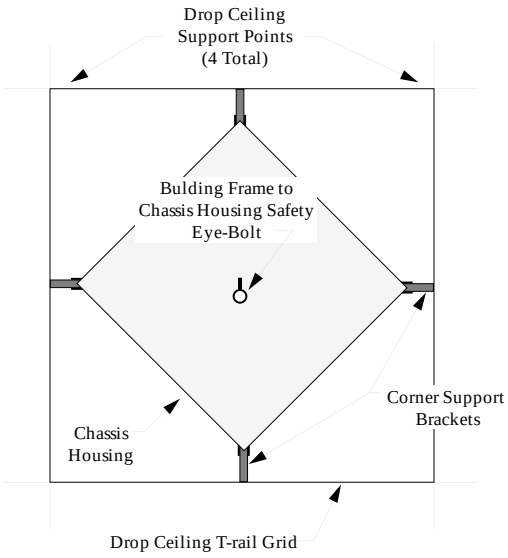


Figure 10 - Corner Support Installation Pattern

1) Determine the ceiling tile for the AD1273 installation. Obtain adequate working space by removing that tile and two or three tiles immediately surrounding it.

2) Determine a location in the building frame centered above the intended installation site for securing a safety chain to the AD1273 chassis housing (see Figure 11).

3) Verify that the ceiling grid T-rails immediately surrounding the intended installation location are secured to the building frame with safety wires.

These wires must be snug between the building frame and the ceiling grid BEFORE the additional weight of the AD1273 is added.

4) Cut an 11.25-inch diamond into the center of the ceiling tile used to mount the AD1273.

Assemble the chassis housing, safety hook, corner support brackets, housing flange, and ceiling tile on the floor.

5) Secure the safety hook to the top of the chassis housing.

6) Bolt the four corner support brackets (provided) to the corners of the chassis housing (see Figure 10).

7) Fit the chassis housing into the ceiling grid.

8) Suspend the chassis housing with a chain (not provided) between the building frame and the safety hook.

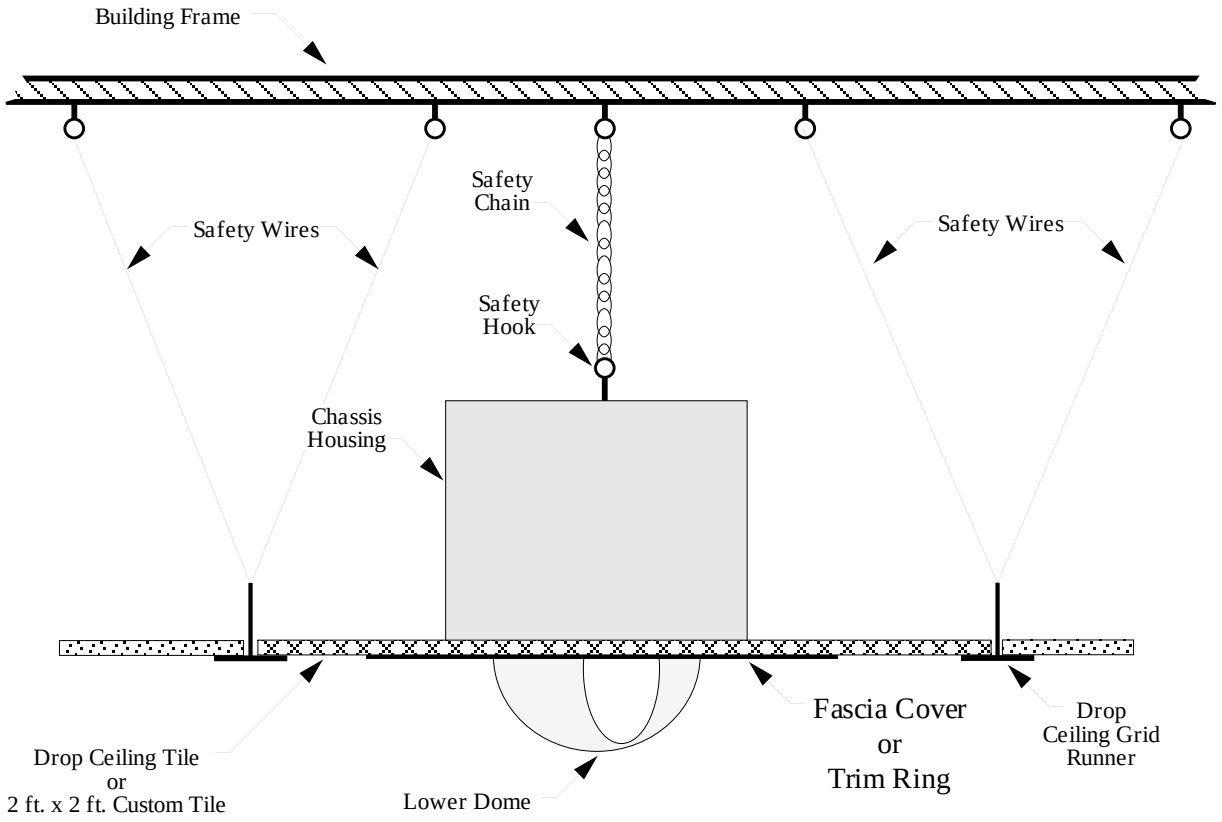


Figure11 - AD1273 Drop Ceiling Mounting

Direct and Remote Hard Mount

Direct hard mounting refers to bolting the AD1273 housing directly to a ceiling. Remote hard mounting involves locating the housing from a raised ceiling or a building frame through the use of pipes and flanges (not provided).

Ceiling Preparation

Two circular bolt patterns are located in the roof of the AD1273 chassis housing (see Figure 12). The outer pattern is for bolting the chassis housing directly to a ceiling or building frame (see Figure 13).

NOTES: Inspect the ceiling area around the proposed installation site looking for wires, pipes, or obstructions that interfere with the installation.

Inspect the ceiling area around the proposed installation site. The ceiling must be capable of supporting 19 pounds plus any additional weight of the installation hardware.

Direct Hard Mount

1) Remove the electric knock-out plug in the center of the chassis housing roof.
2) Place the chassis housing against the ceiling location and support it from below. Mark the pre-drilled holes and the electric knock-out hole on the ceiling.
3) Lower the chassis housing. Drill out the mounting and electric cable holes in the mounting surface.
4) Tape (preferably) or wire-tie the data, the video, and the 24VAC power wires together into a neat harness with no kinks or bends.

NOTE: Do not attach the 7-pin Plug connector or the BNC connector to the harness at this time.

5) Feed the data, the video, and the 24VAC power wiring harness through the opening in the ceiling or the building frame, through the electrical knock-out opening, and into the chassis housing.
6) Bolt the chassis housing to the mounting surface.

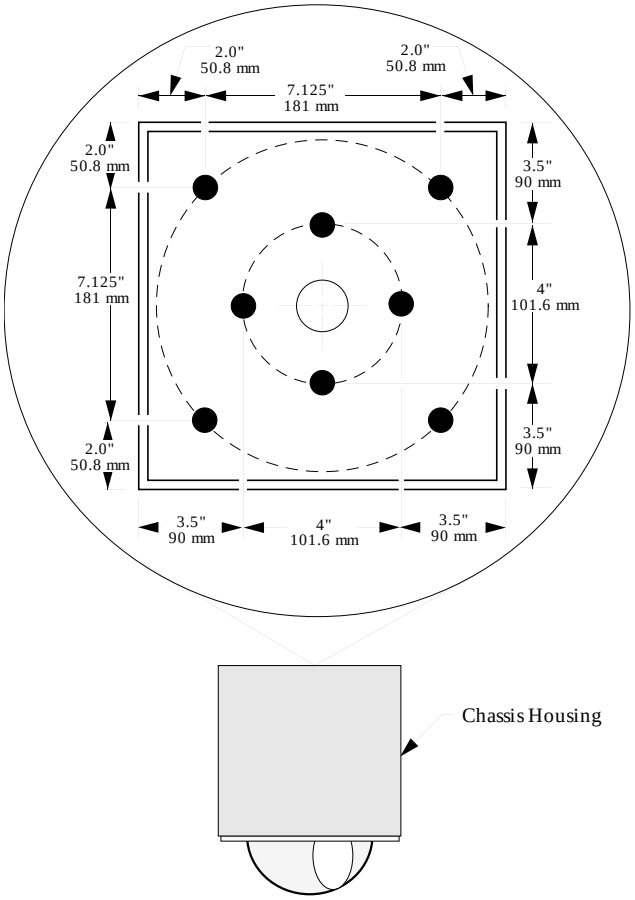


Figure 12 - Chassis Housing Pre-Drilled Hole Pattern

Remote Hard Mount

The inner bolt pattern (see Figure 12) attaches a pipe flange to the chassis housing for remote hard mounting the AD1273 to different building construction types and/or different height requirements (see Figure 14).

1) Remove the electrical knock-out plug in the center of the chassis housing.
2) Place the chassis housing in the desired location and support from below. Measure and install the support pipes/flanges between the housing and the intended surface.
3) Tape (preferably) or wire-tie the data, the video, and the 24VAC power wires together into a neat harness with no kinks or bends.

NOTE: Do not attach the 7-pin Plug connector or the BNC connector to the harness at this time.

4) Feed the data, the video, and the 24VAC power wiring harness through the pipe/flange assembly, through the electrical knock-out opening, and into the chassis housing.
5) Bolt the chassis housing to the mounting surface.

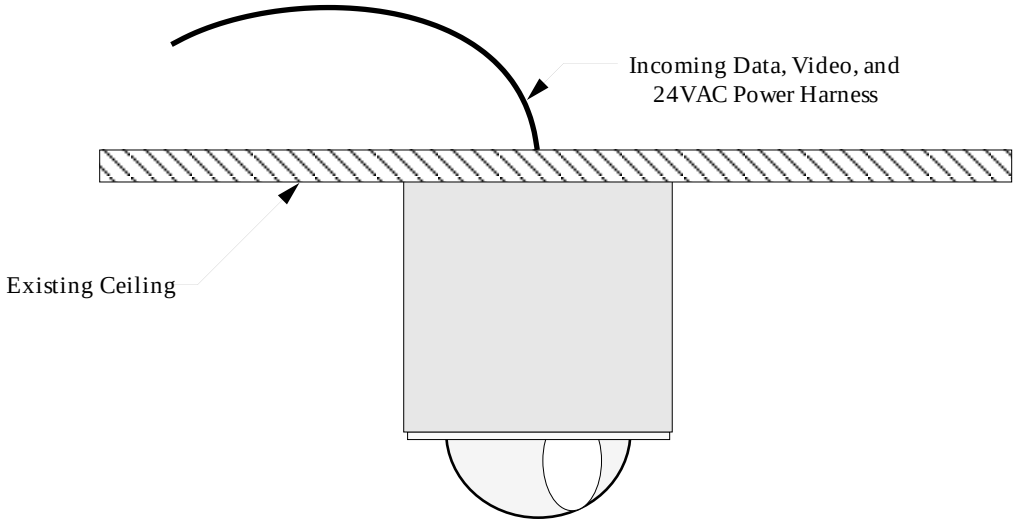


Figure 13 - Direct Chassis Housing-to-Ceiling Hard Mounting

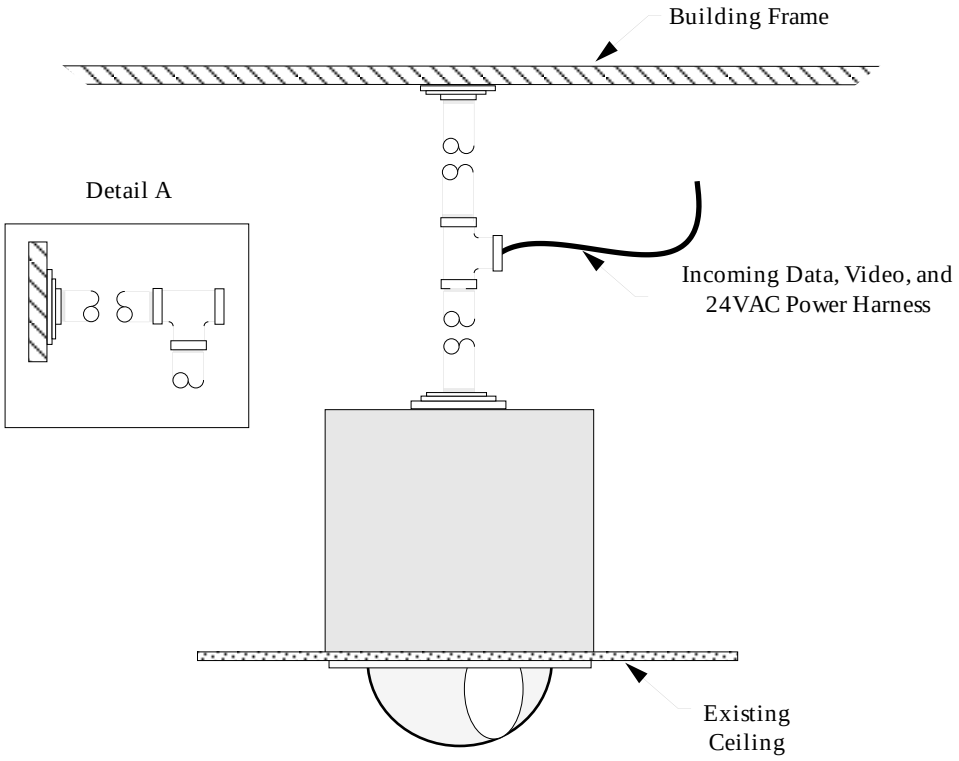


Figure 14 - Remote Chassis Housing-to-Ceiling Hard Mount

Pendant Mount

Mounting the AD1273 in a pendant configuration requires using a pipe flange bolted to the chassis housing, a length of pipe determined by the installer, and a second pipe flange bolted to the ceiling, the building frame, or the foundation.

Preparation

Two circular bolt patterns are drilled in the AD1273 chassis housing (see Figure 12, page 14 - Pre-Drilled Hole Pattern). Use the inner pattern for bolting a pipe flange to the chassis housing.

NOTES: The AD1273 is designed for pendant mounting with or without the pendant shroud (see Figure 15). Procedural steps involving the pendant shroud are marked with an asterisk (*****) in the text and drawings. Disregard steps marked with an asterisk (*****) if the shroud is not installed.

Inspect the ceiling area around the proposed installation site looking for wires, pipes, or obstructions that interfere with the installation.

Inspect the ceiling area around the proposed installation site. The ceiling must be capable of supporting 19 pounds plus any additional weight of the installation hardware.

1*****) Slide the pendant shroud over the user supplied 1 1/4-inch mounting pipe (see Figure 15).

2*****) Slide a hose clamp (not supplied) onto the mounting pipe to hold the pendant shroud out of the way during installation.

3) Remove the safety hook from outside the AD1273 chassis housing and re-position it inside the housing (see Figure 15, Detail A).

4) Remove the knockout plug in the top center of the AD1273 chassis housing and install the knockout grommet (see Figure 15).

5) Thread the pipe flange assembly onto the 1 1/4-inch installation pipe.

NOTE: Apply a thread locking compound such as LockTite™ to the inner threads of the pipe flange assembly.

6) Place the AD1273 chassis housing under the pipe flange assembly and support the housing from below.

7) Route the safety cable and the incoming wiring harness through the hanging pipe, through the flange assembly, and into the AD1273 chassis housing.

8) Connect the safety cable to the safety hook inside the chassis housing.

9) Slide one 1/4-inch flat washer over each of the four 1-inch mounting bolts.

10) Place one bolt (with washer) through one of the pipe flange bolt holes and through the chassis housing.

11) Place a 1/4-inch flat washer over the bolt threads protruding through the inside of the chassis housing.

12) Place a 1/4-inch lock washer over the bolt threads protruding through the inside of the chassis housing.

13) Place a 1/4-inch x 20 hex nut over the exposed threads and tighten.

NOTE: Apply a thread locking compound such as LockTite™ to the bolt threads.

14) Repeat the above procedure for the remaining three bolts.

*** NOTE:** The installation of the pendant shroud can not be completed until after the chassis assembly (see page 18), lower dome (see page 20), and the fascia plate (see page 21) are installed.

15) Refer to page 22 for details about completing the pendant shroud installation.

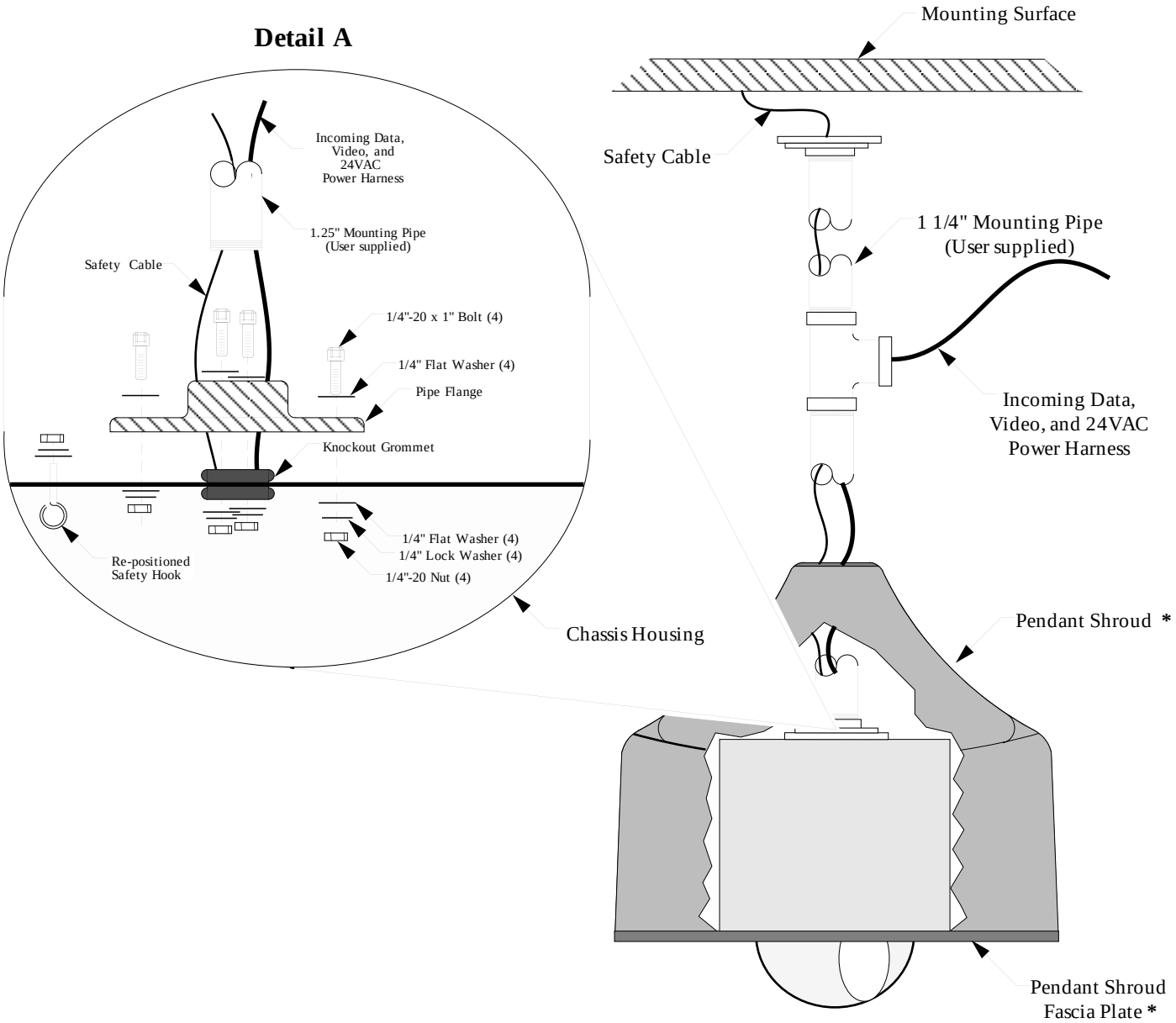


Figure 15 - Pendant Mounting the AD1273

Chassis Installation

Prior to installing the chassis in the chassis housing, set the 8-position DIP switch and the camera number thumbwheel switches. Both switches are mounted on the printed circuit board located on top of the chassis.

Refer to page 4, **Setup**, for instructions on **Dome Configuration** and **Camera Number Assignment**.

1) One end of the 18-inch safety cable (provided) is connected to the top of the AD1273 chassis at the factory. Attach the free end of the safety cable to the clip attached to the inside center of the chassis housing (see Figure 16).

CAUTION
Secure the safety cable to the chassis housing before connecting the data, video, and 24VAC power wires. The wires are not strong enough to support the weight of the chassis and severe damage **WILL** result should the chassis fall!

2) Feed the data, the video, and the 24VAC power wiring harness through the opening in the upper corner of the chassis housing.

CAUTION
Prior to connecting the wiring harness to the AD1273, ensure that the incoming 24VAC power is **OFF**. At power-up, the AD1273 automatically executes a start-up test routine of the pan and tilt motors. **Serious injury may result by connecting a live wiring harness to the AD1273.**

3) Attach the 7-pin Plug connector to the data wires and the 24VAC power wires in the wiring harness (see page 10, Connections).

4) Connect the 7-pin Plug connector of the wiring harness to the 7-pin Ramp connector mounted to the chassis PCB.

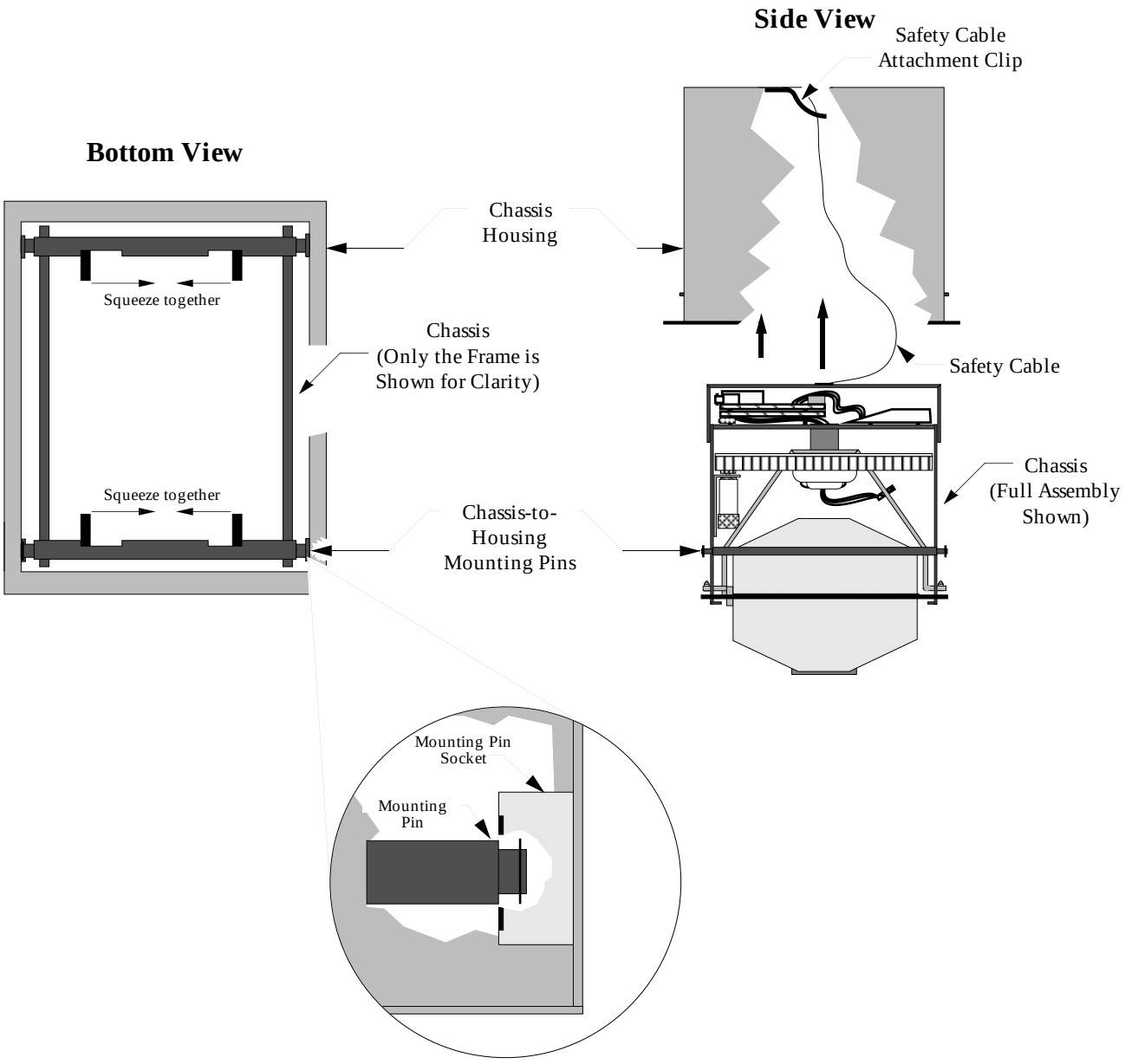
5) Attach the female BNC connector to the video co-ax wire in the wiring harness.

6) Connect the female BNC connector of the wiring harness to the male BNC connector mounted to the chassis PCB.

7) Coil any excess wiring on top of the PCB cover to prevent contact with the pan-drive gear.

8) Squeeze the four spring-loaded chassis mounting pin handles together with both hands. Insert the chassis mounting pins into the appropriate mounting pin sockets within the chassis housing and release.

CAUTION
Ensure that the chassis mounting pins are properly seated in the chassis mounting sockets. See Figure 16, Detail A.



Detail A: Chassis Mounting Pin Positive Engagement

Figure 16 - Chassis-to-Housing Installation

Lower Dome Installation

Align the viewing port (clear area) of the lower dome with the camera lens.

NOTE: Prevent fingerprints accumulating on the lens surface by holding the lower dome around the outer edges.

1) Align the lower dome viewing port to the camera lens opening.

2) Push the plastic safety lanyard attached to the lower dome into the lanyard tab slot on the pan axis frame (see Figure 17, Detail C). The tab must be all the way through the tab slot to prevent the lower dome from accidental dropping.

3) Push the four lower dome mounting snaps into the four snap sockets located on the pan axis chassis (see Figure 17 Detail A).

Lower Dome Ball Stud Positive Engagement

The lower dome attaches to the chassis frame via four ball studs connecting to four clips on the AD1273 chassis. The bubble is correctly installed when the shoulders of the ball studs are in complete contact with the shoulders of the chassis clips.

CAUTION

Ensure that the mounting snaps seat properly into the sockets to eliminate any possibility of the lower dome wobbling or dropping during a dome rotation. Figure 17, Detail B, shows the correct and incorrect positions of the ball studs in the mounting clips.

Adjust the height (higher or lower) of the ball studs by adding or removing washers to the base of the ball stud.

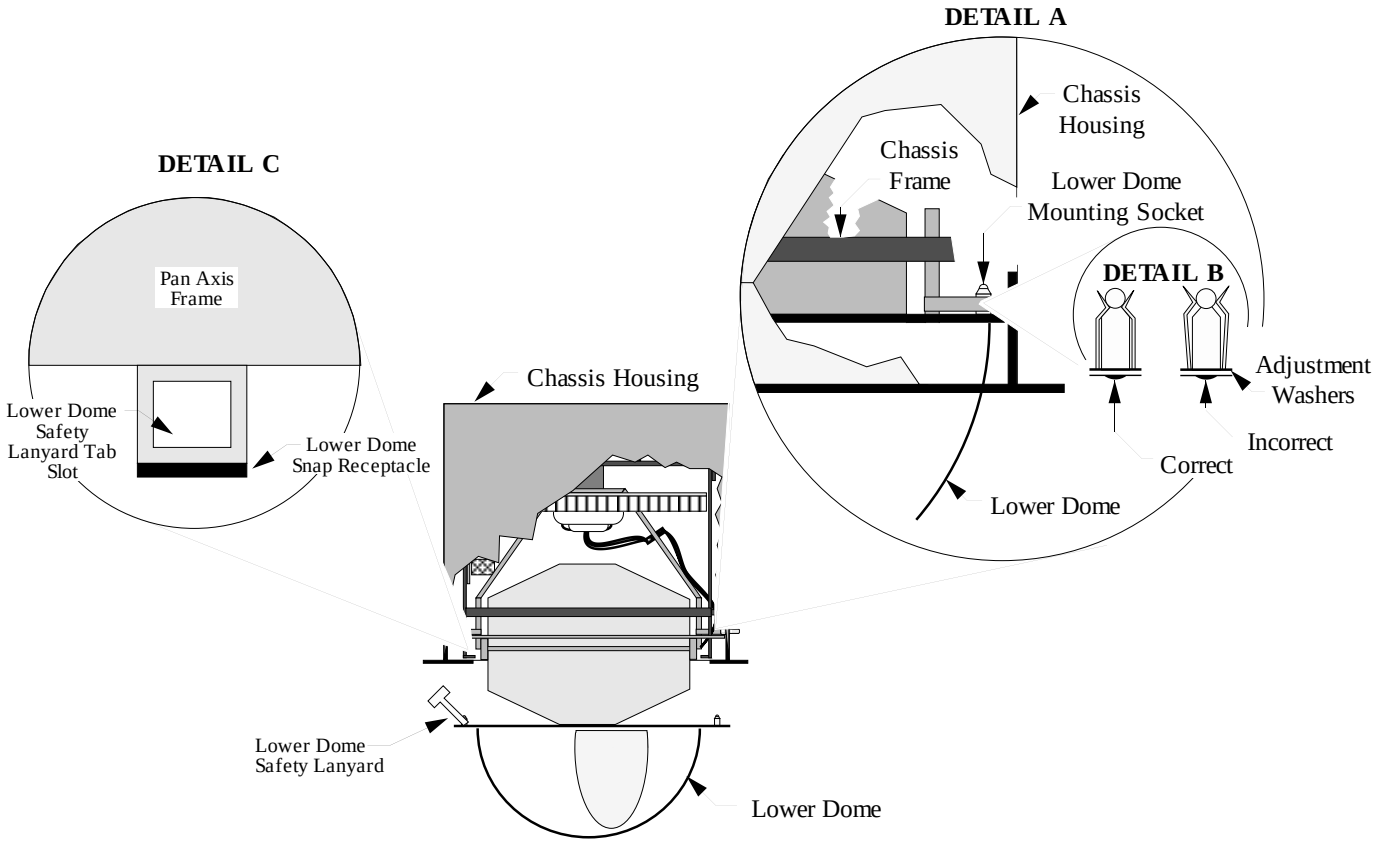


Figure 17 - Lower Dome Installation

Fascia Plate Installation

1) Push the plastic safety lanyard attached to the fascia plate into the lanyard tab slot on the chassis frame. The tab must be all the way through the tab slot to prevent accidental dropping of the fascia plate (see Figure 18).
2) Push the fascia plate snaps into the snap receptacles located on the chassis housing.

Trim Ring Installation

An optional trim ring (part number AD1273/TR) is available to improve the final appearance of installations that require cutting the existing ceiling or drop ceiling tile.

NOTE: The AD1273/TR Trim Ring replaces the fascia cover provided with the standard AD1273 unit.

1) Remove the fascia cover from the AD1273 chassis housing by gently prying loose the cover-to-chassis mounting snaps.
2) Remove the fascia cover safety lanyard by twisting the plastic tabs where the lanyard inserts into the chassis frame mounting slot (see Figure 18).
3) Insert the trim ring safety lanyard by twisting the plastic tabs and inserting into the chassis mounting slot (see Figure 18, Detail A).

NOTE: The fascia cover safety lanyard and the trim ring safety lanyard use the same chassis frame mounting slot.

4) Align the four mounting snaps on the upper surface of the trim ring to the four chassis frame mounting snap receptacles.
5) Push the trim ring upwards until the four mounting snaps are secure in the four mounting snap receptacles.

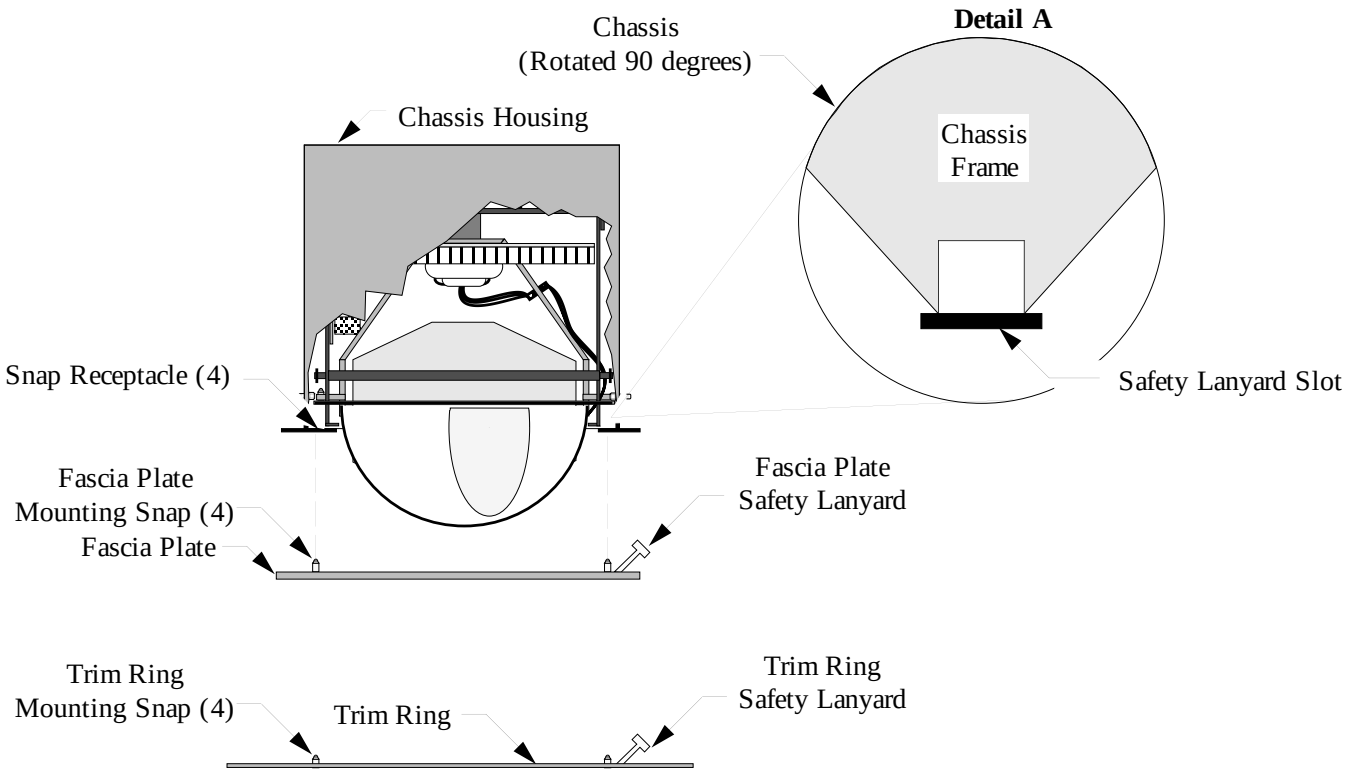


Figure 18 - Fascia Plate **OR** Trim Ring Installation

Pendant Shroud Installation

This procedure applies only to pendant installations using the pendant shroud. These instructions complete the pendant mount installation procedure (refer to page 16, **Pendant Mount**).

NOTE: Verify that the chassis, the lower dome, and the fascia cover installation procedures are complete before proceeding with the pendant shroud installation.

1) Attach the pendant shroud fascia plate to the chassis housing with four 1/4-inch x 20 x 1-inch machine screws (see Figure 19).

2) Loosen the hose clamp on the pendant mounting pipe and lower the pendant shroud into place on the pendant shroud fascia plate (see Figure 19).

NOTES: Leave the hose clamp snugly attached to the pendant mount pipe for future servicing.

The original trim plate provided with the CobraDome is not used with the pendant mount kit.

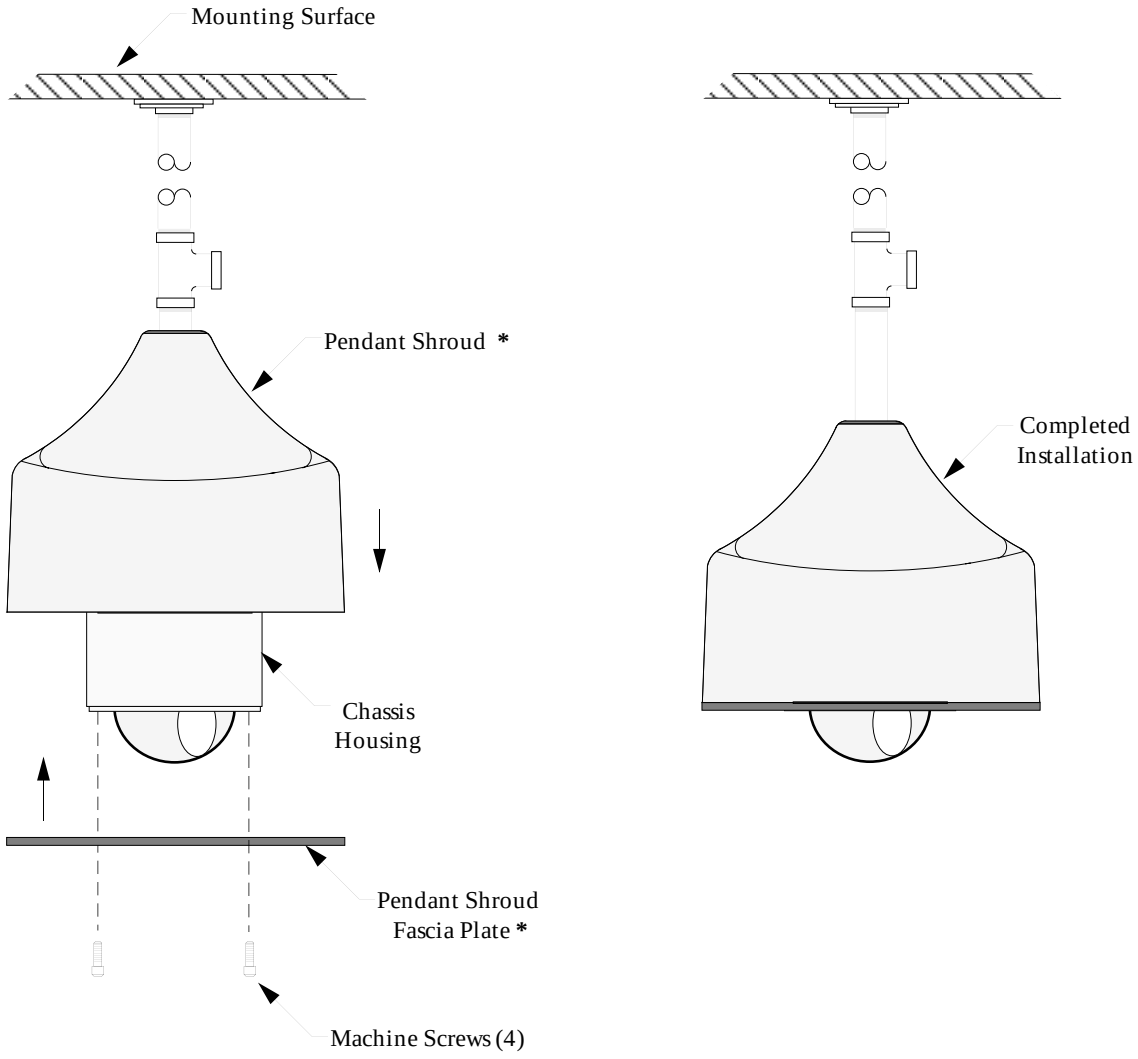


Figure 19 - Pendant Shroud Installation

OPERATION

The AD1273 Series dome uses AD Manchester Control Code for pan/tilt positioning, camera zoom, camera focus, and lens iris functions. A single Manchester Control Code (data) line provides uni-directional support for a group of 64 camera & pan/tilt units (see page 6, Camera Number Assignment). Larger systems use one additional Manchester Control Code line for each additional 64 cameras (see page 6 - Camera Number Sequencing).

Table 7, page 27 lists the operating commands and their related functions.

Autopan

The Autopan feature allows the operator to program the AD1273 for continuous pan-motion across a user-defined field of view. The pre-selected pan area is stored in on-board memory.

Configuring Autopan

NOTE: Refer to the keyboard diagram (Figure 20 for AD1678CM and Figure 21 for AD2078) while reading the following directions.

1) Position the camera to the desired start position (first Autopan boundary) with the keyboard joystick.

2) Enter **70**, then press **SET SHOT** on the keyboard.

3) Position the camera at the desired end position (second Autopan boundary) with the keyboard joystick.

4) Enter **71**, then press **SET SHOT** on the keyboard.

NOTES: The path/direction taken to reach the stop position in step 3 is the same direction that the camera will move when Autopan is activated.

A detailed explanation of all the AD1273 programming functions begins on page 26.

Operating Autopan

To start the Autopan feature, enter **72 Shot**. The system receiver uses the positions stored in **Set Shot(s) 70** and **71** to determine the Autopan operation.

Stopping Autopan

The AD1273 camera continues panning until manually stopped by the operator. Moving the keyboard joystick in any direction or **CALL**ing a preset shot from the AD1273 memory cancels the Autopan operation.

Preset Operation

The Preset Scene feature of the AD1273 permits the operator to pre-select and recall a particular scene (64 maximum) via keyboard command(s). The pre-selected scene is stored in the AD1273 on-board memory.

Three separate speeds are available for calling presets; **Default** (Normal), **Next Slow**, and **Next Slowest**.

A **Default** (Normal) call acquires the desired target within a period of two (2) seconds.

A **Next Slow** call acquires the desired target within a period of four (4) seconds for the next **Call Shot** command *only*.

A **Next Slowest** call acquires the desired target within eight (8) seconds for the next **Call Shot** command *only*.

Configuring Presets

1) Manually position the camera to the desired location using the keyboard joystick.

2) Enter the desired position number (1-64). Press **SET SHOT** on the system keyboard to store the location.

Operating Presets

To call a particular scene, enter the scene number (1-64) then press **CALL**.

1) To call a particular scene at the Default rate (2 sec), enter the **SCENE #** (1-64), then press **CALL**.

2) To call a particular scene at the **Next Slow** rate (4 sec), enter **68 CALL**, followed immediately by the **SCENE #** (1-64), then press **CALL**.

3) To call a particular scene at the **Next Slowest** rate (8 sec), enter **69 CALL**, followed immediately by the **SCENE #** (1-64), then press **CALL**.

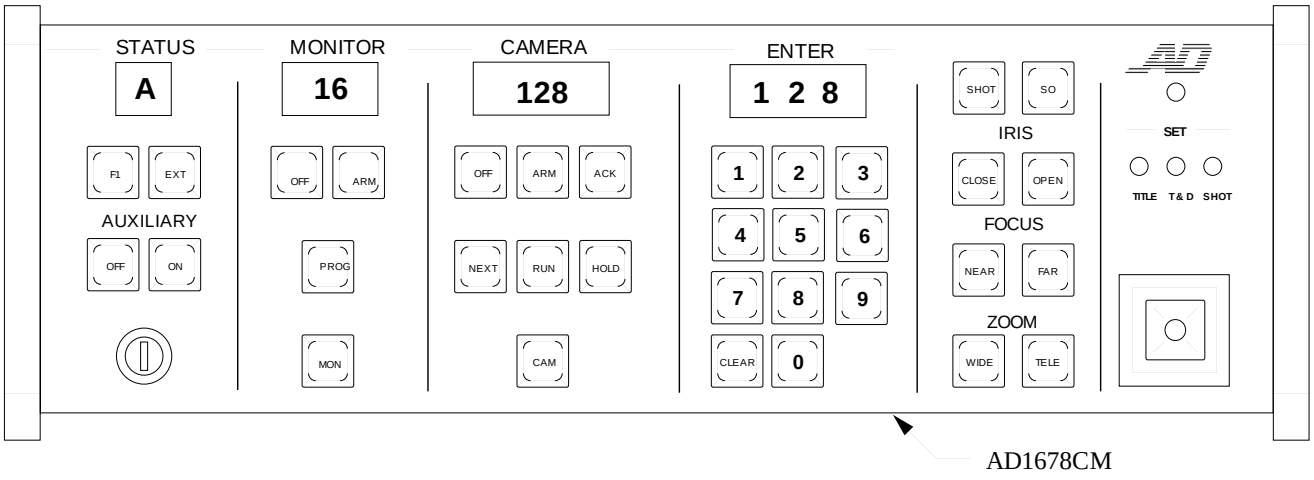


Figure 20 - AD1678CM Operator Keyboard

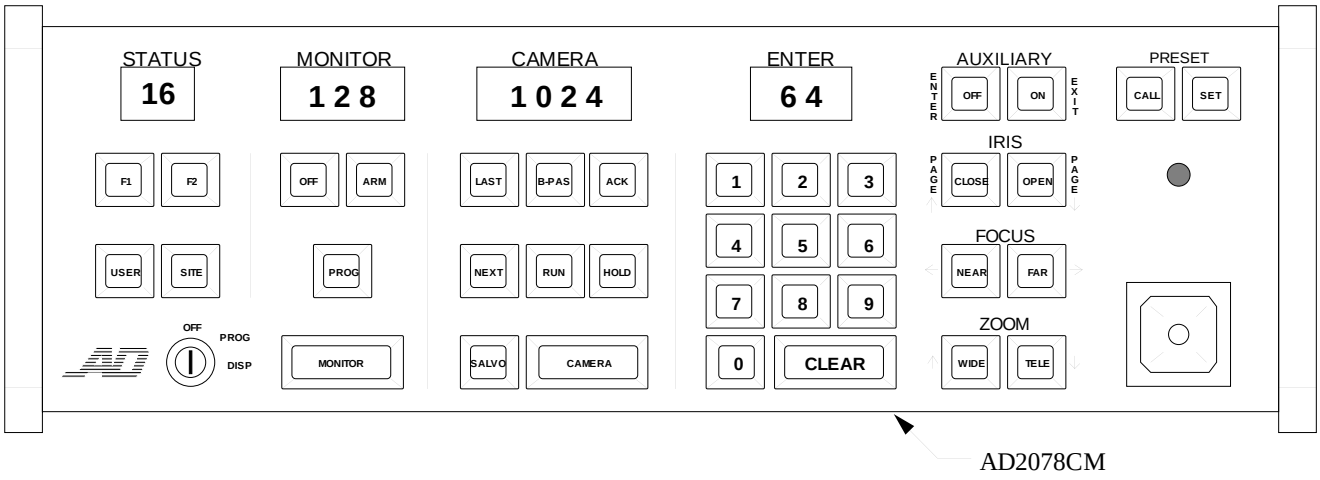


Figure 21 - AD2078 Operator Keyboard

Special Commands

The following is a list of special AD Manchester Control Code commands available to the AD1273.

RESET DOME - (**65 CALL** then **65 SET**)
This command sequence resets the dome and enables Auto Iris mode (color cameras only). The Iris defaults to the factory setting.

NOTE: This command will not affect battery backed presets.

AUTO IRIS RESET - (66 CALL then **66 SET)**
This command sequence resets the iris to factory default settings for optimal lighting/viewing conditions.

FLIP - (67 CALL)
This command immediately rotates the dome 180° degrees along the pan axis only.

VIDEO PHASE ADJUST - (**67 SET**)
This command toggles the dome between Video Phase Adjust and the normal operating mode. In the Video Phase Adjust mode, IRIS OPEN advances the vertical video phase and IRIS CLOSE retards the vertical video phase.

NEXT SLOW - (**68 CALL**)
This command causes the next preset received to acquire the target position within four seconds. The preset command immediately follows the speed command. All subsequent **CALL** commands return to the default target acquisition rate of two seconds.

NEXT SLOWEST - (**69 CALL**)
This command causes the next preset received to acquire the target position within eight seconds. The preset command immediately follows the speed command. All subsequent **CALL** commands return to the default target acquisition rate of two seconds.

AUTO IRIS - (**70 CALL**)
This command enables the auto iris with the current set point. Iris control commands move the set point. This is the default state of the dome.

NOTE: Issuing a **70 CALL** command **ENABLES** the AGC circuit in the color camera of the CobraDome model # C10C.

MANUAL IRIS - (**71 CALL**)
This command enables the manual iris. This mode allows full control of the iris from open to close using iris control commands.

NOTES: Issuing a **71 CALL-69 SET** command sequence **DISABLES** the Automatic Gain Control (AGC) circuit in the color camera of the CobraDome model # C10C.

In a low light situation, the Auto Iris Mode provides the brightest possible image through a combination of a fully opened iris and the maximum level of gain from the AGC circuit. Switching to Manual Iris may not provide the capability to obtain a brighter image and may actually dim the scene by as much as two full f-stops.

AUTOPAN SETUP - (70 SET)
Position the camera to the first end point, enter **70 SET**. Move the camera in the desired direction to the second end point, enter **71 SET**. These pan positions are remembered as the end points for autopan.

AUTOPAN Activation - (**72 CALL** then **72 PRESET SET**)
This command starts the autopan operation. Autopan speed is a fixed speed. Any subsequent pan, tilt, or preset command terminates the autopan function.

AUTOMATIC GAIN CONTROL - (68 SET)
This command turns the Automatic Gain Control (AGC) circuitry in a color camera on. The AGC circuit is designed to maintain the video signal at a specific level as the amount of available scene illumination decreases.

NOTE: *The default state of the AGC circuit is ON. The AGC circuit is always on <u>EXCEPT</u> when the Manual Iris command (71 CALL) is issued.*

Table 7 - Standard and Special AD1273 Control Commands

Keyboard Command	Dome Function	Dome Action
1 - 64 Set Shot	**Set Preset** 1 - 64	Saves Pan/Tilt position as preset 1 - 64
1 - 64 Call Shot	**Goto Preset** 1 - 64	Moves Pan/Tilt to preset position 1 - 64
65 Call, then, **65 Set**	**Reset Dome**	Recalibrates dome to original startup position
66 Call, then, **66 Set**	**Auto-Iris Reset** (Iris Function)	Resets Iris to factory default settings
67 Set	**Video Phase Adjust**	Toggles Video Phase Adjustment ON/OFF
67 Call	**Flip** (Pan Axis Function)	Rotates camera 180° on the pan axis only
68 Call	**Next Slow** (Pan Axis Function)	Acquires preset position in 4 seconds
69 Call	**Next Slowest** (Pan Axis Function)	Acquires preset position in 8 seconds
68 Set	**AGC Enabled**	Turns Auto Gain Control (AGC) ON (Color Cameras Only)
71 Call, then, **69 Set**	**AGC Disabled**	Turns Auto Gain Control (AGC) OFF (Color Cameras Only)
70 Set **71 Set**	**Auto-Pan Setup** (Pan Axis Function)	Saves start position of Auto-Pan Sweep Saves end position of Auto-Pan Sweep
70 Call	**Auto-Iris** (Iris Function)	Enables Auto-Iris (Turns AGC on automatically when using a color camera)
71 Call	**Manual Iris** (Iris Function)	Enables Manual Iris
72 Call	**Auto-Pan Activation** (Pan Axis Function)	Starts Auto-Pan operation

ADJUSTMENTS

Backlash Adjustment

Proper backlash adjustment eliminates any apparent video image hesitation during a slow pan rotation through 360 degrees. Also, when the pan action stops, the video image should not bounce back and forth.

Checking and Setting Backlash

1) Disconnect all power to the CobraDome.

2) Remove the CobraDome chassis from the back box and place the chassis on a solid, flat surface.

3) Obtain a #73 twist drill bit. Verify with calipers that the solid end of the bit measures 0.023 inches (0.71mm)

NOTE: The thickness of a standard resistor lead is approximately 0.023 inches/23 Mils (0.71mm) and may be substituted for a #73 twist drill bit.

4) Insert the bit between any pan axis drive gear tooth and a pan axis motor gear tooth (see Figure 23).

5) ***Slowly*** rotate the pan gear by hand and note the clearance of the bit between the pan axis gear teeth and the pan motor gear teeth.

6) Repeat the measurement process four times, using a different location (typically between the gear spokes) on the pan axis drive gear.

NOTE: During the cooling process, gears tend to warp slightly and develop a “high” point. This high point is generally found above the blank spaces between the gear spokes (see Figure 22).

The backlash is properly adjusted when the bit fits snugly between the “high” point on the pan motor drive gear teeth and the pan gear teeth.

7) Adjust the backlash by loosening the pan axis drive motor mounting bracket screws on the side of the CobraDome chassis. Adjust the pan axis motor until the proper clearance is achieved.

NOTE: The pan drive motor gear must ***always*** remain at right angles to the pan axis drive gear.

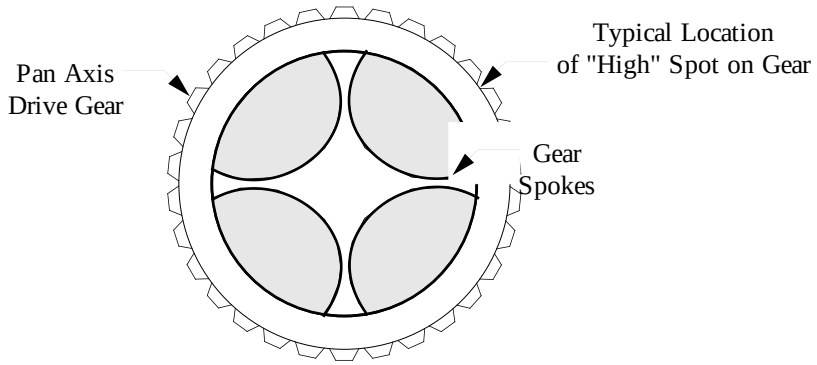


Figure 22 - Pan Axis Drive Gear

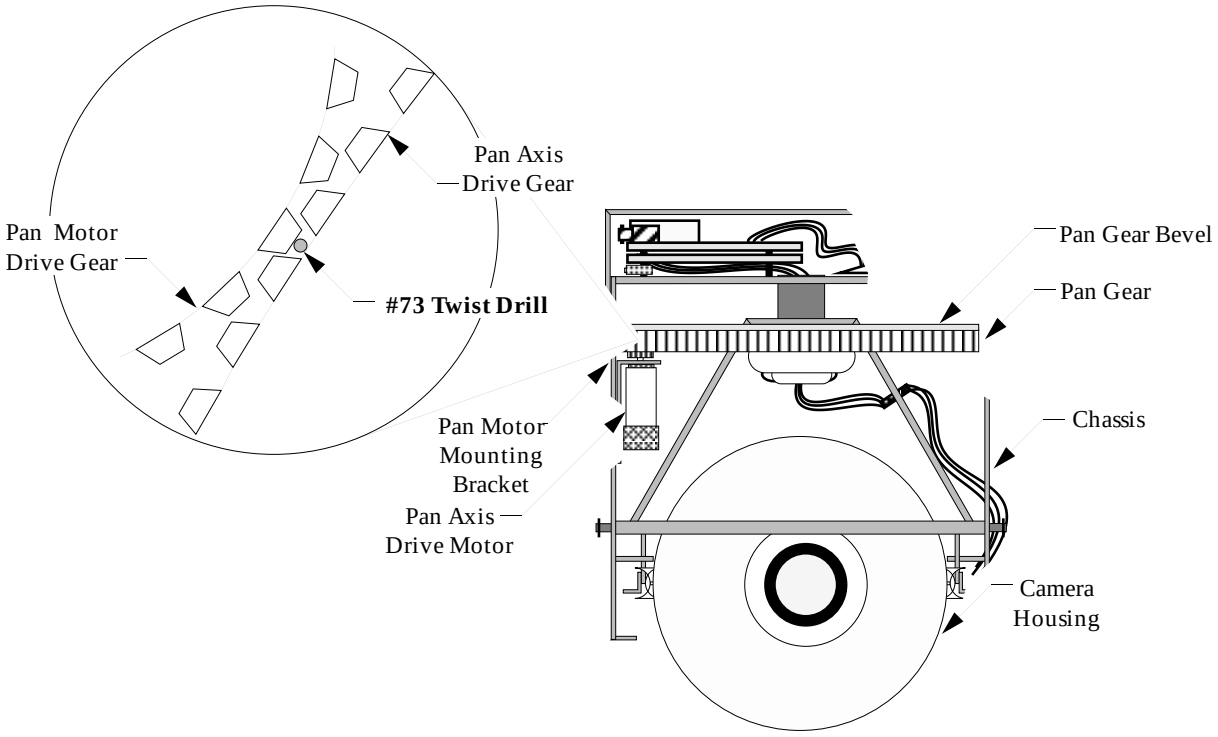


Figure 23 - CobraDome Backlash Adjustment

Lens Tracking Adjustment

When connected to a monitor, the image generated by the CobraDome camera must stay in focus during transitions from telephoto mode to wide angle mode.

If an image losses focus during the transition from tele to wide angle, the lens tracking needs adjustment.

1) Disconnect the 7-pin Plug connector from the 7-pin Ramp connector ① (see Figure 24).

2) Remove the four screws securing the printed circuit board cover to the top of the 1273 chassis, exposing the 8-position DIP switch ⑤.

3) Disable the lens motors by setting switch 3 of the 8-position DIP switch (S1) ⑤ to the ON position (disabled).

4) Remove the four screws securing the camera shroud ② and the lens shroud ③ to the camera/lens frame. Remove both shrouds.

5) Loosen the lens tracking adjustment wheel set screw ④.

NOTE: Early CobraDome models use a 0.035 inch Allen-head set screw ④ while later models use a Phillips-head set screw ④.

6) Restore power to the CobraDome by connecting the 7-pin Plug connector to the 7-pin Ramp connector ①.

7) Connect a monitor to the video out BNC ⑥.

8) Manually open the iris using the iris ring ⑦. Open the iris to its maximum opening.

9) Manually retract the lens using the zoom ring ⑧. Retract the zoom to its minimum (wide angle) magnification range.

10) Manually focus on an object as clearly as possible by rotating the lens focus ring ⑨.

11) Manually zoom in on the object (i.e., increasing the magnification) using the zoom ring ⑧.

12) Rotate the tracking adjustment wheel ⑩ until the object appears in focus.

13) Repeat steps 8 through 12 until the camera stays in focus through the entire zoom range.

14) Re-tighten the tracking adjustment wheel set screw ④.

The zoom tracking adjustment is now complete.

15) Unplug the 7-pin plug connector from the 7-pin ramp connector ①.

16) Replace the camera shroud ② and the lens shroud ③.

17) Enable the lens drive motors by setting switch 3 of the 8-position DIP switch (S1) ⑤ to the OFF position (enabled).

18) Replace the printed circuit board cover on top of the CobraDome chassis.

19) Restore power to the CobraDome by connecting the 7-pin Plug connector to the 7-pin Ramp connector ①.

IF YOU ENCOUNTER ANY PROBLEMS OPERATING THIS UNIT, OR NEED TECHNICAL ASSISTANCE, CALL OUR TECHNICAL SUPPORT CENTER AT:

within the United States: **1-800-442-2225**

outside the United States: **(914) 624-7640**

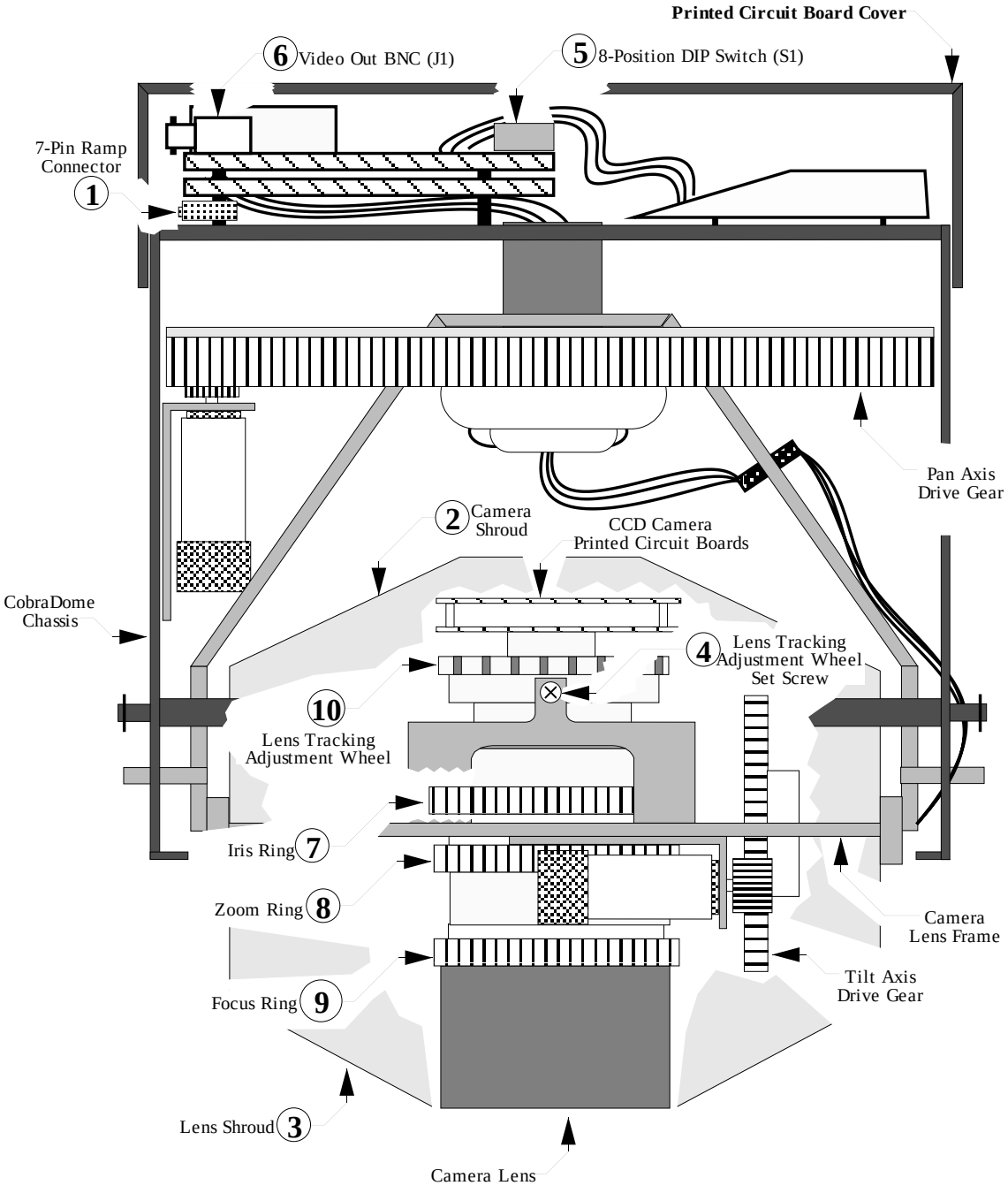
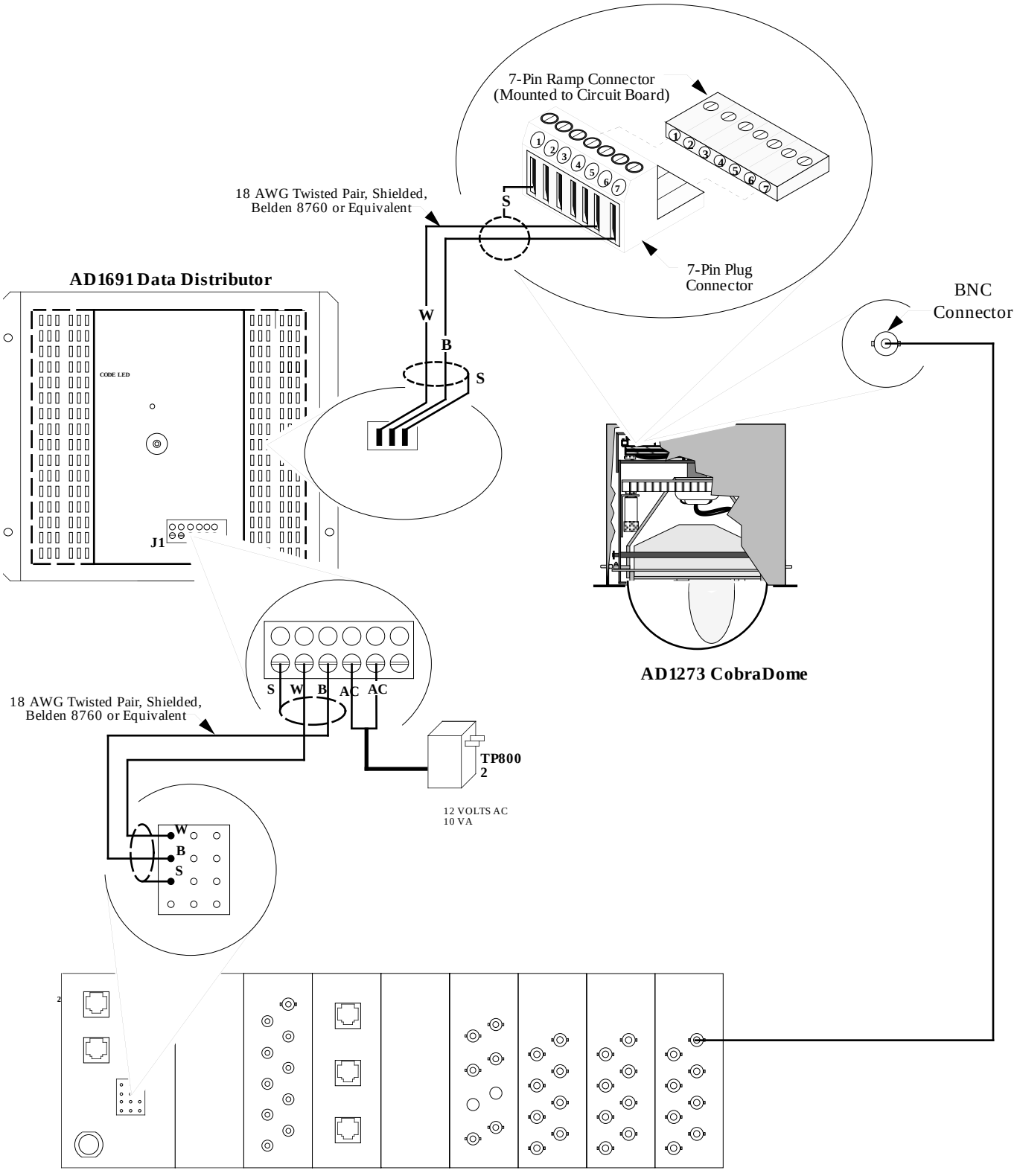
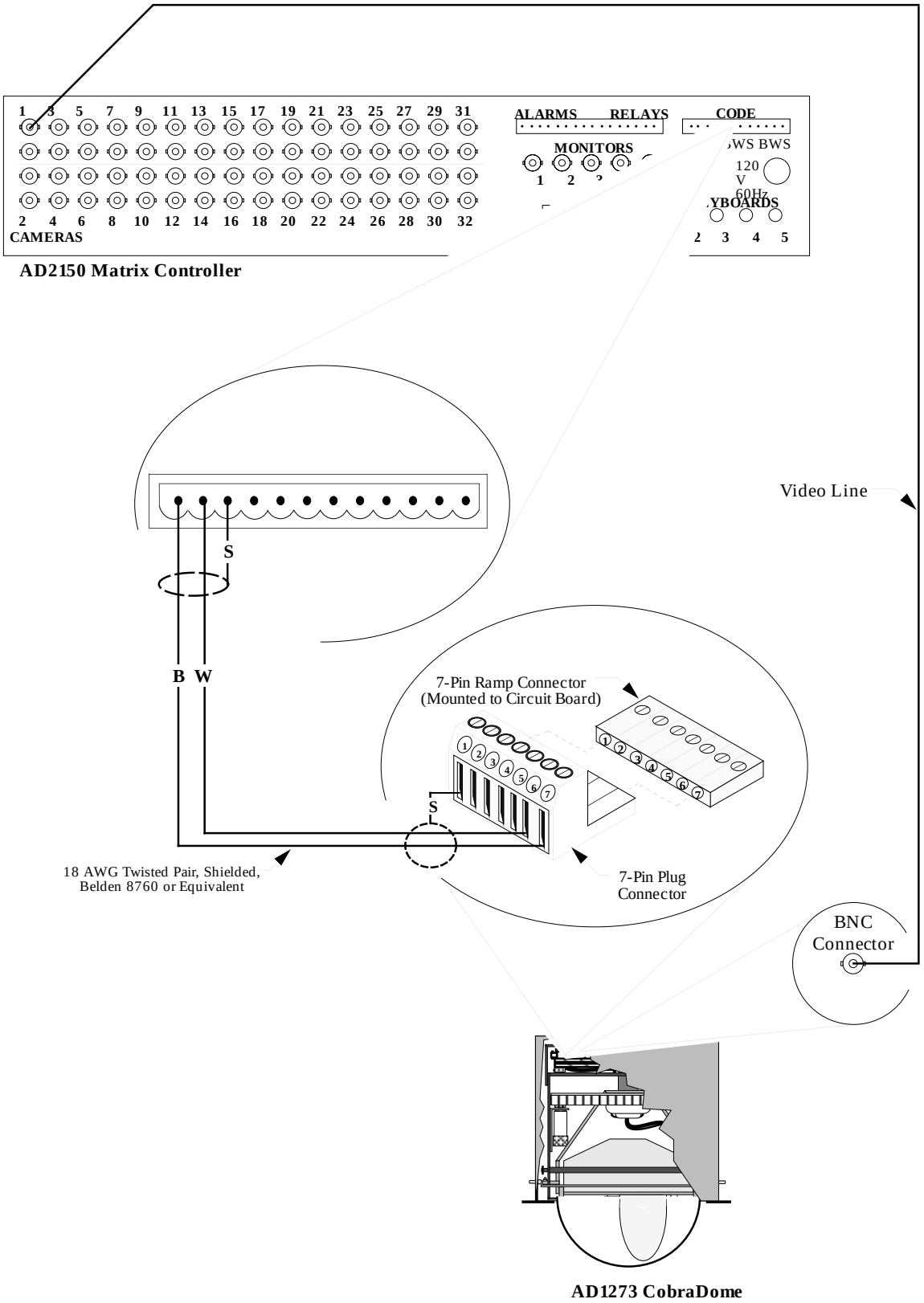


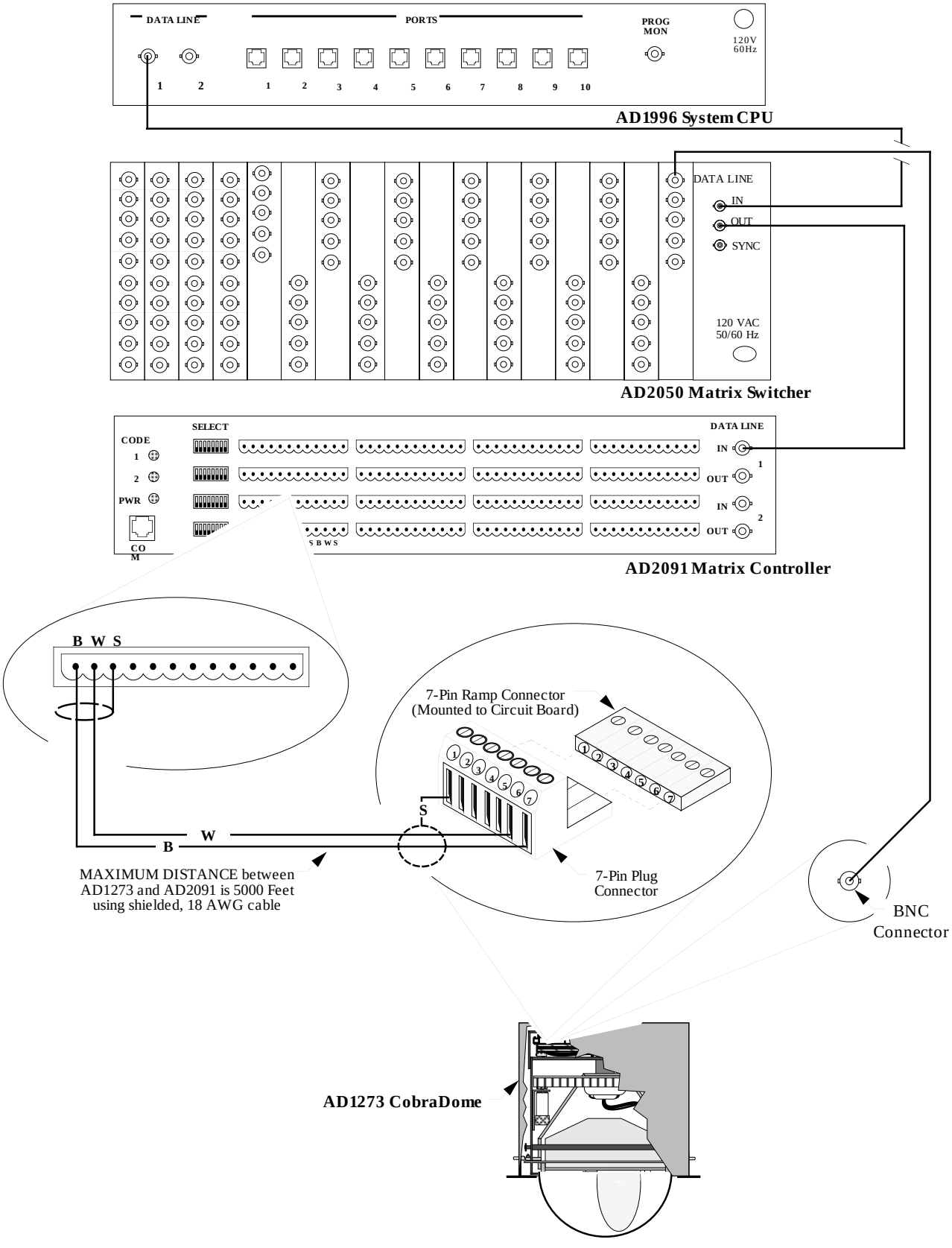
Figure 24 - Zoom Lens Tracking Adjustment

Appendix



NOTE: These Connections Are Typical of One Data Distribution Unit


1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31
2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32
CAMERAS
ALARMS
RELAYS
CODE
MONITORS
1 2
120
V
60Hz
2 3 4 5
AD2150 Matrix Controller
S
B W
Video Line
7-Pin Ramp Connector
(Mounted to Circuit Board)
1 2 3 4 5 6 7
S
18 AWG Twisted Pair, Shielded,
Belden 8760 or Equivalent
7-Pin Plug
Connector
BNC
Connector
AD1273 CobraDome


DATA LINE
PORTS
PROG MON
120V 60Hz
1 2
1 2 3 4 5 6 7 8 9 10
AD1996 System CPU
DATA LINE
IN
OUT
SYNC
120 VAC 50/60 Hz
AD2050 Matrix Switcher
SELECT
DATA LINE
CODE
1
2
PWR
COM
IN
OUT
IN
OUT
1
2
AD2091 Matrix Controller
B W S
7-Pin Ramp Connector (Mounted to Circuit Board)
S
W
B
MAXIMUM DISTANCE between AD1273 and AD2091 is 5000 Feet using shielded, 18 AWG cable
7-Pin Plug Connector
BNC Connector
AD1273 CobraDome

CAMERA NUMBER SEQUENCE

Camera Number	Switch Setting			Camera Number	Switch Setting			Camera Number	Switch Setting		
	Tens	Units			Tens	Units			Tens	Units	
1	0	1	Group 1	65	0	1	Group 2	129	0	1	Group 3
2	0	2	Group 1	66	0	2	Group 2	130	0	2	Group 3
3	0	3	Group 1	67	0	3	Group 2	131	0	3	Group 3
4	0	4	Group 1	68	0	4	Group 2	132	0	4	Group 3
5	0	5	Group 1	69	0	5	Group 2	133	0	5	Group 3
6	0	6	Group 1	70	0	6	Group 2	134	0	6	Group 3
7	0	7	Group 1	71	0	7	Group 2	135	0	7	Group 3
8	0	8	Group 1	72	0	8	Group 2	136	0	8	Group 3
9	0	9	Group 1	73	0	9	Group 2	137	0	9	Group 3
10	1	0	Group 1	74	1	0	Group 2	138	1	0	Group 3
11	1	1	Group 1	75	1	1	Group 2	139	1	1	Group 3
12	1	2	Group 1	76	1	2	Group 2	140	1	2	Group 3
13	1	3	Group 1	77	1	3	Group 2	141	1	3	Group 3
14	1	4	Group 1	78	1	4	Group 2	142	1	4	Group 3
15	1	5	Group 1	79	1	5	Group 2	143	1	5	Group 3
16	1	6	Group 1	80	1	6	Group 2	144	1	6	Group 3
17	1	7	Group 1	81	1	7	Group 2	145	1	7	Group 3
18	1	8	Group 1	82	1	8	Group 2	146	1	8	Group 3
19	1	9	Group 1	83	1	9	Group 2	147	1	9	Group 3
20	2	0	Group 1	84	2	0	Group 2	148	2	0	Group 3
21	2	1	Group 1	85	2	1	Group 2	149	2	1	Group 3
22	2	2	Group 1	86	2	2	Group 2	150	2	2	Group 3
23	2	3	Group 1	87	2	3	Group 2	151	2	3	Group 3
24	2	4	Group 1	88	2	4	Group 2	152	2	4	Group 3
25	2	5	Group 1	89	2	5	Group 2	153	2	5	Group 3
26	2	6	Group 1	90	2	6	Group 2	154	2	6	Group 3
27	2	7	Group 1	91	2	7	Group 2	155	2	7	Group 3
28	2	8	Group 1	92	2	8	Group 2	156	2	8	Group 3
29	2	9	Group 1	93	2	9	Group 2	157	2	9	Group 3
30	3	0	Group 1	94	3	0	Group 2	158	3	0	Group 3
31	3	1	Group 1	95	3	1	Group 2	159	3	1	Group 3
32	3	2	Group 1	96	3	2	Group 2	160	3	2	Group 3
33	3	3	Group 1	97	3	3	Group 2	161	3	3	Group 3
34	3	4	Group 1	98	3	4	Group 2	162	3	4	Group 3
35	3	5	Group 1	99	3	5	Group 2	163	3	5	Group 3
36	3	6	Group 1	100	3	6	Group 2	164	3	6	Group 3
37	3	7	Group 1	101	3	7	Group 2	165	3	7	Group 3
38	3	8	Group 1	102	3	8	Group 2	166	3	8	Group 3
39	3	9	Group 1	103	3	9	Group 2	167	3	9	Group 3
40	4	0	Group 1	104	4	0	Group 2	168	4	0	Group 3
41	4	1	Group 1	105	4	1	Group 2	169	4	1	Group 3
42	4	2	Group 1	106	4	2	Group 2	170	4	2	Group 3
43	4	3	Group 1	107	4	3	Group 2	171	4	3	Group 3
44	4	4	Group 1	108	4	4	Group 2	172	4	4	Group 3
45	4	5	Group 1	109	4	5	Group 2	173	4	5	Group 3
46	4	6	Group 1	110	4	6	Group 2	174	4	6	Group 3
47	4	7	Group 1	111	4	7	Group 2	175	4	7	Group 3
48	4	8	Group 1	112	4	8	Group 2	176	4	8	Group 3
49	4	9	Group 1	113	4	9	Group 2	177	4	9	Group 3
50	5	0	Group 1	114	5	0	Group 2	178	5	0	Group 3
51	5	1	Group 1	115	5	1	Group 2	179	5	1	Group 3
52	5	2	Group 1	116	5	2	Group 2	180	5	2	Group 3
53	5	3	Group 1	117	5	3	Group 2	181	5	3	Group 3
54	5	4	Group 1	118	5	4	Group 2	182	5	4	Group 3
55	5	5	Group 1	119	5	5	Group 2	183	5	5	Group 3
56	5	6	Group 1	120	5	6	Group 2	184	5	6	Group 3
57	5	7	Group 1	121	5	7	Group 2	185	5	7	Group 3
58	5	8	Group 1	122	5	8	Group 2	186	5	8	Group 3
59	5	9	Group 1	123	5	9	Group 2	187	5	9	Group 3
60	6	0	Group 1	124	6	0	Group 2	188	6	0	Group 3
61	6	1	Group 1	125	6	1	Group 2	189	6	1	Group 3
62	6	2	Group 1	126	6	2	Group 2	190	6	2	Group 3
63	6	3	Group 1	127	6	3	Group 2	191	6	3	Group 3
64	6	4	Group 1	128	6	4	Group 2	192	6	4	Group 3

Camera Number	Switch Setting		
	Tens	Units	
193	0	1	Group 4
194	0	2	Group 4
195	0	3	Group 4
196	0	4	Group 4
197	0	5	Group 4
198	0	6	Group 4
199	0	7	Group 4
200	0	8	Group 4
201	0	9	Group 4
202	1	0	Group 4
203	1	1	Group 4
204	1	2	Group 4
205	1	3	Group 4
206	1	4	Group 4
207	1	5	Group 4
208	1	6	Group 4
209	1	7	Group 4
210	1	8	Group 4
211	1	9	Group 4
212	2	0	Group 4
213	2	1	Group 4
214	2	2	Group 4
215	2	3	Group 4
216	2	4	Group 4
217	2	5	Group 4
218	2	6	Group 4
219	2	7	Group 4
220	2	8	Group 4
221	2	9	Group 4
222	3	0	Group 4
223	3	1	Group 4
224	3	2	Group 4
225	3	3	Group 4
226	3	4	Group 4
227	3	5	Group 4
228	3	6	Group 4
229	3	7	Group 4
230	3	8	Group 4
231	3	9	Group 4
232	4	0	Group 4
233	4	1	Group 4
234	4	2	Group 4
235	4	3	Group 4
236	4	4	Group 4
237	4	5	Group 4
238	4	6	Group 4
239	4	7	Group 4
240	4	8	Group 4
241	4	9	Group 4
242	5	0	Group 4
243	5	1	Group 4
244	5	2	Group 4
245	5	3	Group 4
246	5	4	Group 4
247	5	5	Group 4
248	5	6	Group 4
249	5	7	Group 4
250	5	8	Group 4
251	5	9	Group 4
252	6	0	Group 4
253	6	1	Group 4
254	6	2	Group 4
255	6	3	Group 4
256	6	4	Group 4

Camera Number	Switch Setting		
	Tens	Units	
257	0	1	Group 5
258	0	2	Group 5
259	0	3	Group 5
260	0	4	Group 5
261	0	5	Group 5
262	0	6	Group 5
263	0	7	Group 5
264	0	8	Group 5
265	0	9	Group 5
266	1	0	Group 5
267	1	1	Group 5
268	1	2	Group 5
269	1	3	Group 5
270	1	4	Group 5
271	1	5	Group 5
272	1	6	Group 5
273	1	7	Group 5
274	1	8	Group 5
275	1	9	Group 5
276	2	0	Group 5
277	2	1	Group 5
278	2	2	Group 5
279	2	3	Group 5
280	2	4	Group 5
281	2	5	Group 5
282	2	6	Group 5
283	2	7	Group 5
284	2	8	Group 5
285	2	9	Group 5
286	3	0	Group 5
287	3	1	Group 5
288	3	2	Group 5
289	3	3	Group 5
290	3	4	Group 5
291	3	5	Group 5
292	3	6	Group 5
293	3	7	Group 5
294	3	8	Group 5
295	3	9	Group 5
296	4	0	Group 5
297	4	1	Group 5
298	4	2	Group 5
299	4	3	Group 5
300	4	4	Group 5
301	4	5	Group 5
302	4	6	Group 5
303	4	7	Group 5
304	4	8	Group 5
305	4	9	Group 5
306	5	0	Group 5
307	5	1	Group 5
308	5	2	Group 5
309	5	3	Group 5
310	5	4	Group 5
311	5	5	Group 5
312	5	6	Group 5
313	5	7	Group 5
314	5	8	Group 5
315	5	9	Group 5
316	6	0	Group 5
317	6	1	Group 5
318	6	2	Group 5
319	6	3	Group 5
320	6	4	Group 5

Camera Number	Switch Setting		
	Tens	Units	
321	0	1	Group 6
322	0	2	Group 6
323	0	3	Group 6
324	0	4	Group 6
325	0	5	Group 6
326	0	6	Group 6
327	0	7	Group 6
328	0	8	Group 6
329	0	9	Group 6
330	1	0	Group 6
331	1	1	Group 6
332	1	2	Group 6
333	1	3	Group 6
334	1	4	Group 6
335	1	5	Group 6
336	1	6	Group 6
337	1	7	Group 6
338	1	8	Group 6
339	1	9	Group 6
340	2	0	Group 6
341	2	1	Group 6
342	2	2	Group 6
343	2	3	Group 6
344	2	4	Group 6
345	2	5	Group 6
346	2	6	Group 6
347	2	7	Group 6
348	2	8	Group 6
349	2	9	Group 6
350	3	0	Group 6
351	3	1	Group 6
352	3	2	Group 6
353	3	3	Group 6
354	3	4	Group 6
355	3	5	Group 6
356	3	6	Group 6
357	3	7	Group 6
358	3	8	Group 6
359	3	9	Group 6
360	4	0	Group 6
361	4	1	Group 6
362	4	2	Group 6
363	4	3	Group 6
364	4	4	Group 6
365	4	5	Group 6
366	4	6	Group 6
367	4	7	Group 6
368	4	8	Group 6
369	4	9	Group 6
370	5	0	Group 6
371	5	1	Group 6
372	5	2	Group 6
373	5	3	Group 6
374	5	4	Group 6
375	5	5	Group 6
376	5	6	Group 6
377	5	7	Group 6
378	5	8	Group 6
379	5	9	Group 6
380	6	0	Group 6
381	6	1	Group 6
382	6	2	Group 6
383	6	3	Group 6
384	6	4	Group 6

CAMERA NUMBER SEQUENCE

Camera Number	Switch Setting		
	Tens	Units	
385	0	1	Group 7
386	0	2	Group 7
387	0	3	Group 7
388	0	4	Group 7
389	0	5	Group 7
390	0	6	Group 7
391	0	7	Group 7
392	0	8	Group 7
393	0	9	Group 7
394	1	0	Group 7
395	1	1	Group 7
396	1	2	Group 7
397	1	3	Group 7
398	1	4	Group 7
399	1	5	Group 7
400	1	6	Group 7
401	1	7	Group 7
402	1	8	Group 7
403	1	9	Group 7
404	2	0	Group 7
405	2	1	Group 7
406	2	2	Group 7
407	2	3	Group 7
408	2	4	Group 7
409	2	5	Group 7
410	2	6	Group 7
411	2	7	Group 7
412	2	8	Group 7
413	2	9	Group 7
414	3	0	Group 7
415	3	1	Group 7
416	3	2	Group 7
417	3	3	Group 7
418	3	4	Group 7
419	3	5	Group 7
420	3	6	Group 7
421	3	7	Group 7
422	3	8	Group 7
423	3	9	Group 7
424	4	0	Group 7
425	4	1	Group 7
426	4	2	Group 7
427	4	3	Group 7
428	4	4	Group 7
429	4	5	Group 7
430	4	6	Group 7
431	4	7	Group 7
432	4	8	Group 7
433	4	9	Group 7
434	5	0	Group 7
435	5	1	Group 7
436	5	2	Group 7
437	5	3	Group 7
438	5	4	Group 7
439	5	5	Group 7
440	5	6	Group 7
441	5	7	Group 7
442	5	8	Group 7
443	5	9	Group 7
444	6	0	Group 7
445	6	1	Group 7
446	6	2	Group 7
447	6	3	Group 7
448	6	4	Group 7

Camera Number	Switch Setting		
	Tens	Units	
449	0	1	Group 8
450	0	2	Group 8
451	0	3	Group 8
452	0	4	Group 8
453	0	5	Group 8
454	0	6	Group 8
455	0	7	Group 8
456	0	8	Group 8
457	0	9	Group 8
458	1	0	Group 8
459	1	1	Group 8
460	1	2	Group 8
461	1	3	Group 8
462	1	4	Group 8
463	1	5	Group 8
464	1	6	Group 8
465	1	7	Group 8
466	1	8	Group 8
467	1	9	Group 8
468	2	0	Group 8
469	2	1	Group 8
470	2	2	Group 8
471	2	3	Group 8
472	2	4	Group 8
473	2	5	Group 8
474	2	6	Group 8
475	2	7	Group 8
476	2	8	Group 8
477	2	9	Group 8
478	3	0	Group 8
479	3	1	Group 8
480	3	2	Group 8
481	3	3	Group 8
482	3	4	Group 8
483	3	5	Group 8
484	3	6	Group 8
485	3	7	Group 8
486	3	8	Group 8
487	3	9	Group 8
488	4	0	Group 8
489	4	1	Group 8
490	4	2	Group 8
491	4	3	Group 8
492	4	4	Group 8
493	4	5	Group 8
494	4	6	Group 8
495	4	7	Group 8
496	4	8	Group 8
497	4	9	Group 8
498	5	0	Group 8
499	5	1	Group 8
500	5	2	Group 8
501	5	3	Group 8
502	5	4	Group 8
503	5	5	Group 8
504	5	6	Group 8
505	5	7	Group 8
506	5	8	Group 8
507	5	9	Group 8
508	6	0	Group 8
509	6	1	Group 8
510	6	2	Group 8
511	6	3	Group 8
512	6	4	Group 8

Camera Number	Switch Setting		
	Tens	Units	
513	0	1	Group 9
514	0	2	Group 9
515	0	3	Group 9
516	0	4	Group 9
517	0	5	Group 9
518	0	6	Group 9
519	0	7	Group 9
520	0	8	Group 9
521	0	9	Group 9
522	1	0	Group 9
523	1	1	Group 9
524	1	2	Group 9
525	1	3	Group 9
526	1	4	Group 9
527	1	5	Group 9
528	1	6	Group 9
529	1	7	Group 9
530	1	8	Group 9
531	1	9	Group 9
532	2	0	Group 9
533	2	1	Group 9
534	2	2	Group 9
535	2	3	Group 9
536	2	4	Group 9
537	2	5	Group 9
538	2	6	Group 9
539	2	7	Group 9
540	2	8	Group 9
541	2	9	Group 9
542	3	0	Group 9
543	3	1	Group 9
544	3	2	Group 9
545	3	3	Group 9
546	3	4	Group 9
547	3	5	Group 9
548	3	6	Group 9
549	3	7	Group 9
550	3	8	Group 9
551	3	9	Group 9
552	4	0	Group 9
553	4	1	Group 9
554	4	2	Group 9
555	4	3	Group 9
556	4	4	Group 9
557	4	5	Group 9
558	4	6	Group 9
559	4	7	Group 9
560	4	8	Group 9
561	4	9	Group 9
562	5	0	Group 9
563	5	1	Group 9
564	5	2	Group 9
565	5	3	Group 9
566	5	4	Group 9
567	5	5	Group 9
568	5	6	Group 9
569	5	7	Group 9
570	5	8	Group 9
571	5	9	Group 9
572	6	0	Group 9
573	6	1	Group 9
574	6	2	Group 9
575	6	3	Group 9
576	6	4	Group 9

Camera Number	Switch Setting		
	Tens	Units	
577	0	1	Group 10
578	0	2	Group 10
579	0	3	Group 10
580	0	4	Group 10
581	0	5	Group 10
582	0	6	Group 10
583	0	7	Group 10
584	0	8	Group 10
585	0	9	Group 10
586	1	0	Group 10
587	1	1	Group 10
588	1	2	Group 10
589	1	3	Group 10
590	1	4	Group 10
591	1	5	Group 10
592	1	6	Group 10
593	1	7	Group 10
594	1	8	Group 10
595	1	9	Group 10
596	2	0	Group 10
597	2	1	Group 10
598	2	2	Group 10
599	2	3	Group 10
600	2	4	Group 10
601	2	5	Group 10
602	2	6	Group 10
603	2	7	Group 10
604	2	8	Group 10
605	2	9	Group 10
606	3	0	Group 10
607	3	1	Group 10
608	3	2	Group 10
609	3	3	Group 10
610	3	4	Group 10
611	3	5	Group 10
612	3	6	Group 10
613	3	7	Group 10
614	3	8	Group 10
615	3	9	Group 10
616	4	0	Group 10
617	4	1	Group 10
618	4	2	Group 10
619	4	3	Group 10
620	4	4	Group 10
621	4	5	Group 10
622	4	6	Group 10
623	4	7	Group 10
624	4	8	Group 10
625	4	9	Group 10
626	5	0	Group 10
627	5	1	Group 10
628	5	2	Group 10
629	5	3	Group 10
630	5	4	Group 10
631	5	5	Group 10
632	5	6	Group 10
633	5	7	Group 10
634	5	8	Group 10
635	5	9	Group 10
636	6	0	Group 10
637	6	1	Group 10
638	6	2	Group 10
639	6	3	Group 10
640	6	4	Group 10

Camera Number	Switch Setting		
	Tens	Units	
641	0	1	Group 11
642	0	2	Group 11
643	0	3	Group 11
644	0	4	Group 11
645	0	5	Group 11
646	0	6	Group 11
647	0	7	Group 11
648	0	8	Group 11
649	0	9	Group 11
650	1	0	Group 11
651	1	1	Group 11
652	1	2	Group 11
653	1	3	Group 11
654	1	4	Group 11
655	1	5	Group 11
656	1	6	Group 11
657	1	7	Group 11
658	1	8	Group 11
659	1	9	Group 11
660	2	0	Group 11
661	2	1	Group 11
662	2	2	Group 11
663	2	3	Group 11
664	2	4	Group 11
665	2	5	Group 11
666	2	6	Group 11
667	2	7	Group 11
668	2	8	Group 11
669	2	9	Group 11
670	3	0	Group 11
671	3	1	Group 11
672	3	2	Group 11
673	3	3	Group 11
674	3	4	Group 11
675	3	5	Group 11
676	3	6	Group 11
677	3	7	Group 11
678	3	8	Group 11
679	3	9	Group 11
680	4	0	Group 11
681	4	1	Group 11
682	4	2	Group 11
683	4	3	Group 11
684	4	4	Group 11
685	4	5	Group 11
686	4	6	Group 11
687	4	7	Group 11
688	4	8	Group 11
689	4	9	Group 11
690	5	0	Group 11
691	5	1	Group 11
692	5	2	Group 11
693	5	3	Group 11
694	5	4	Group 11
695	5	5	Group 11
696	5	6	Group 11
697	5	7	Group 11
698	5	8	Group 11
699	5	9	Group 11
700	6	0	Group 11
701	6	1	Group 11
702	6	2	Group 11
703	6	3	Group 11
704	6	4	Group 11

Camera Number	Switch Setting		
	Tens	Units	
705	0	1	Group 12
706	0	2	Group 12
707	0	3	Group 12
708	0	4	Group 12
709	0	5	Group 12
710	0	6	Group 12
711	0	7	Group 12
712	0	8	Group 12
713	0	9	Group 12
714	1	0	Group 12
715	1	1	Group 12
716	1	2	Group 12
717	1	3	Group 12
718	1	4	Group 12
719	1	5	Group 12
720	1	6	Group 12
721	1	7	Group 12
722	1	8	Group 12
723	1	9	Group 12
724	2	0	Group 12
725	2	1	Group 12
726	2	2	Group 12
727	2	3	Group 12
728	2	4	Group 12
729	2	5	Group 12
730	2	6	Group 12
731	2	7	Group 12
732	2	8	Group 12
733	2	9	Group 12
734	3	0	Group 12
735	3	1	Group 12
736	3	2	Group 12
737	3	3	Group 12
738	3	4	Group 12
739	3	5	Group 12
740	3	6	Group 12
741	3	7	Group 12
742	3	8	Group 12
743	3	9	Group 12
744	4	0	Group 12
745	4	1	Group 12
746	4	2	Group 12
747	4	3	Group 12
748	4	4	Group 12
749	4	5	Group 12
750	4	6	Group 12
751	4	7	Group 12
752	4	8	Group 12
753	4	9	Group 12
754	5	0	Group 12
755	5	1	Group 12
756	5	2	Group 12
757	5	3	Group 12
758	5	4	Group 12
759	5	5	Group 12
760	5	6	Group 12
761	5	7	Group 12
762	5	8	Group 12
763	5	9	Group 12
764	6	0	Group 12
765	6	1	Group 12
766	6	2	Group 12
767	6	3	Group 12
768	6	4	Group 12

Camera Number	Switch Setting		
	Tens	Units	
769	0	1	Group 13
770	0	2	Group 13
771	0	3	Group 13
772	0	4	Group 13
773	0	5	Group 13
774	0	6	Group 13
775	0	7	Group 13
776	0	8	Group 13
777	0	9	Group 13
788	1	0	Group 13
779	1	1	Group 13
780	1	2	Group 13
781	1	3	Group 13
782	1	4	Group 13
783	1	5	Group 13
784	1	6	Group 13
785	1	7	Group 13
786	1	8	Group 13
787	1	9	Group 13
788	2	0	Group 13
789	2	1	Group 13
790	2	2	Group 13
791	2	3	Group 13
792	2	4	Group 13
793	2	5	Group 13
794	2	6	Group 13
795	2	7	Group 13
796	2	8	Group 13
797	2	9	Group 13
798	3	0	Group 13
799	3	1	Group 13
800	3	2	Group 13
801	3	3	Group 13
802	3	4	Group 13
803	3	5	Group 13
804	3	6	Group 13
805	3	7	Group 13
806	3	8	Group 13
807	3	9	Group 13
808	4	0	Group 13
809	4	1	Group 13
810	4	2	Group 13
811	4	3	Group 13
812	4	4	Group 13
813	4	5	Group 13
814	4	6	Group 13
815	4	7	Group 13
816	4	8	Group 13
817	4	9	Group 13
818	5	0	Group 13
819	5	1	Group 13
820	5	2	Group 13
821	5	3	Group 13
822	5	4	Group 13
823	5	5	Group 13
824	5	6	Group 13
825	5	7	Group 13
826	5	8	Group 13
827	5	9	Group 13
828	6	0	Group 13
829	6	1	Group 13
830	6	2	Group 13
831	6	3	Group 13
832	6	4	Group 13

Camera Number	Switch Setting		
	Tens	Units	
833	0	1	Group 14
834	0	2	Group 14
835	0	3	Group 14
836	0	4	Group 14
837	0	5	Group 14
838	0	6	Group 14
839	0	7	Group 14
840	0	8	Group 14
841	0	9	Group 14
842	1	0	Group 14
843	1	1	Group 14
844	1	2	Group 14
845	1	3	Group 14
846	1	4	Group 14
847	1	5	Group 14
848	1	6	Group 14
849	1	7	Group 14
850	1	8	Group 14
851	1	9	Group 14
852	2	0	Group 14
853	2	1	Group 14
854	2	2	Group 14
855	2	3	Group 14
856	2	4	Group 14
857	2	5	Group 14
858	2	6	Group 14
859	2	7	Group 14
860	2	8	Group 14
861	2	9	Group 14
862	3	0	Group 14
863	3	1	Group 14
864	3	2	Group 14
865	3	3	Group 14
866	3	4	Group 14
867	3	5	Group 14
868	3	6	Group 14
869	3	7	Group 14
870	3	8	Group 14
871	3	9	Group 14
872	4	0	Group 14
873	4	1	Group 14
874	4	2	Group 14
875	4	3	Group 14
876	4	4	Group 14
877	4	5	Group 14
878	4	6	Group 14
879	4	7	Group 14
880	4	8	Group 14
881	4	9	Group 14
882	5	0	Group 14
883	5	1	Group 14
884	5	2	Group 14
885	5	3	Group 14
886	5	4	Group 14
887	5	5	Group 14
888	5	6	Group 14
889	5	7	Group 14
890	5	8	Group 14
891	5	9	Group 14
892	6	0	Group 14
893	6	1	Group 14
894	6	2	Group 14
895	6	3	Group 14
896	6	4	Group 14

Camera Number	Switch Setting		
	Tens	Units	
897	0	1	Group 15
898	0	2	Group 15
899	0	3	Group 15
900	0	4	Group 15
901	0	5	Group 15
902	0	6	Group 15
903	0	7	Group 15
904	0	8	Group 15
905	0	9	Group 15
906	1	0	Group 15
907	1	1	Group 15
908	1	2	Group 15
909	1	3	Group 15
910	1	4	Group 15
911	1	5	Group 15
912	1	6	Group 15
913	1	7	Group 15
914	1	8	Group 15
915	1	9	Group 15
916	2	0	Group 15
917	2	1	Group 15
918	2	2	Group 15
919	2	3	Group 15
920	2	4	Group 15
921	2	5	Group 15
922	2	6	Group 15
923	2	7	Group 15
924	2	8	Group 15
925	2	9	Group 15
926	3	0	Group 15
927	3	1	Group 15
928	3	2	Group 15
929	3	3	Group 15
930	3	4	Group 15
931	3	5	Group 15
932	3	6	Group 15
933	3	7	Group 15
934	3	8	Group 15
935	3	9	Group 15
936	4	0	Group 15
937	4	1	Group 15
938	4	2	Group 15
939	4	3	Group 15
940	4	4	Group 15
941	4	5	Group 15
942	4	6	Group 15
943	4	7	Group 15
944	4	8	Group 15
945	4	9	Group 15
946	5	0	Group 15
947	5	1	Group 15
948	5	2	Group 15
949	5	3	Group 15
950	5	4	Group 15
951	5	5	Group 15
952	5	6	Group 15
953	5	7	Group 15
954	5	8	Group 15
955	5	9	Group 15
956	6	0	Group 15
957	6	1	Group 15
958	6	2	Group 15
959	6	3	Group 15
960	6	4	Group 15

Camera Number	Switch Setting		
	Tens	Units	
961	0	1	Group 16
962	0	2	Group 16
963	0	3	Group 16
964	0	4	Group 16
965	0	5	Group 16
966	0	6	Group 16
967	0	7	Group 16
968	0	8	Group 16
969	0	9	Group 16
970	1	0	Group 16
971	1	1	Group 16
972	1	2	Group 16
973	1	3	Group 16
974	1	4	Group 16
975	1	5	Group 16
976	1	6	Group 16
977	1	7	Group 16
978	1	8	Group 16
979	1	9	Group 16
980	2	0	Group 16
981	2	1	Group 16
982	2	2	Group 16
983	2	3	Group 16
984	2	4	Group 16
985	2	5	Group 16
986	2	6	Group 16
987	2	7	Group 16
988	2	8	Group 16
989	2	9	Group 16
990	3	0	Group 16
991	3	1	Group 16
992	3	2	Group 16
993	3	3	Group 16
994	3	4	Group 16
995	3	5	Group 16
996	3	6	Group 16
997	3	7	Group 16
998	3	8	Group 16
999	3	9	Group 16
100	4	0	Group 16
1001	4	1	Group 16
1002	4	2	Group 16
1003	4	3	Group 16
1004	4	4	Group 16
1005	4	5	Group 16
1006	4	6	Group 16
1007	4	7	Group 16
1008	4	8	Group 16
1009	4	9	Group 16
1010	5	0	Group 16
1011	5	1	Group 16
1012	5	2	Group 16
1013	5	3	Group 16
1014	5	4	Group 16
1015	5	5	Group 16
1016	5	6	Group 16
1017	5	7	Group 16
1018	5	8	Group 16
1019	5	9	Group 16
1020	6	0	Group 16
1021	6	1	Group 16
1022	6	2	Group 16
1023	6	3	Group 16
1024	6	4	Group 16

PROBLEM	CHECKLIST
Unit does not respond to power-up tests	Check that 24VAC is connected to pins 3 & 5 of 7-pin connector
After power on tests, unit does not respond to joystick commands	Check that BLACK data wire is connected to pin 7 of 7-pin connector and WHITE data wire is connected to pin 5 of 7-pin connector Check that address of dome is properly set to match camera ID number Check that dipswitch position 1 is set to match camera type ON = color OFF = monochrome
Cannot control lens function (Zoom)	Check that dipswitch position 3 is set to the OFF position
Auto-Iris not working	Check that dipswitch position 4 is set to the OFF position

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AD1273 -to- AD2050 Matrix Switcher A3
AD1273 -to- AD2150 Matrix Switcher A2
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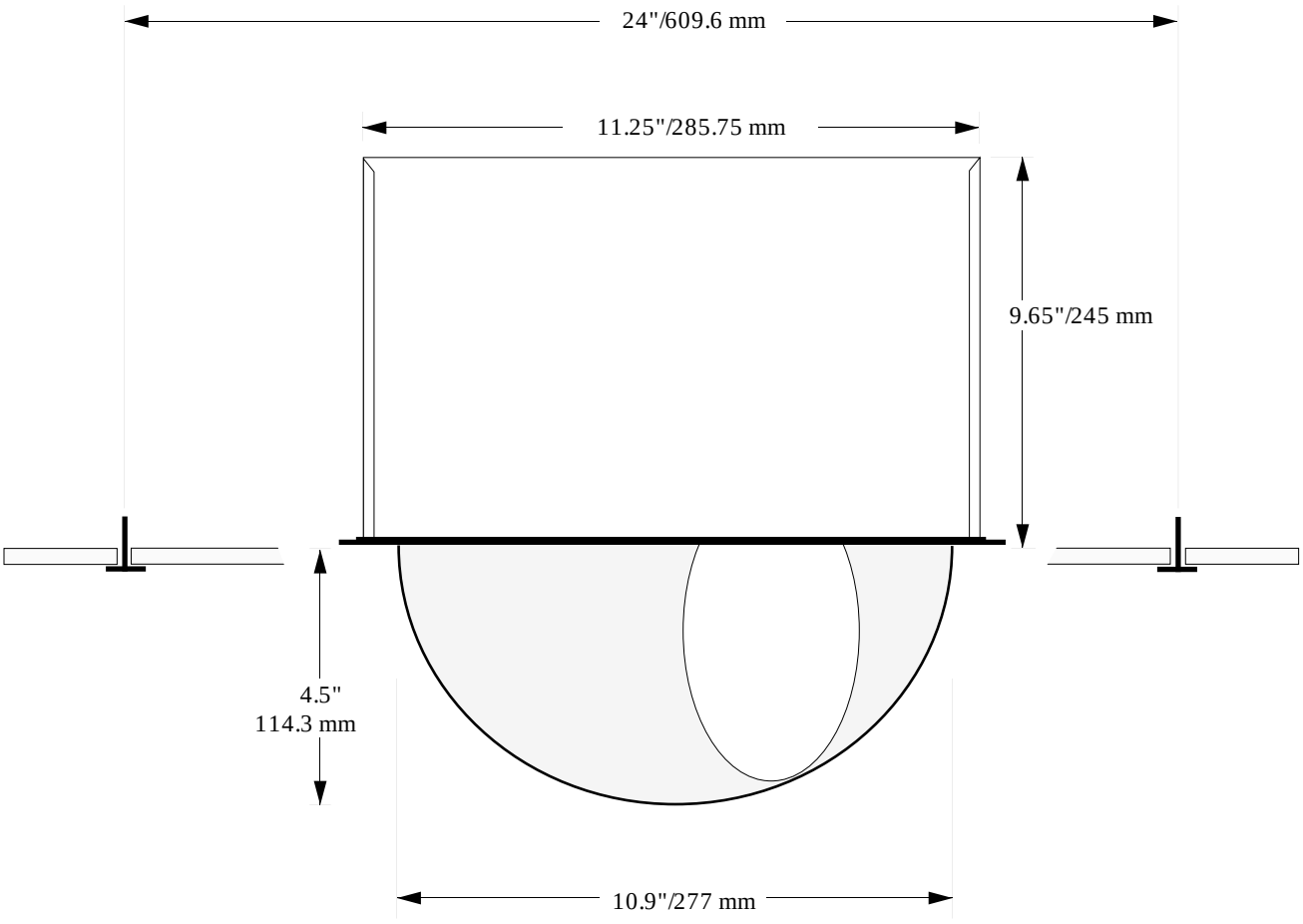
24"/609.6 mm
11.25"/285.75 mm
9.65"/245 mm
4.5"
114.3 mm
10.9"/277 mm

SPECIFICATIONS

MODELS:

AD1273/B10C: Smoked Dome, B/W camera, 10X zoom lens, for drop or hard ceiling mount

AD1273/C10C: Smoked Dome, Color Camera, 10x Zoom Lens, for drop or hard ceiling mount

AD1273/DC: 24" x 24" Drop Ceiling Panel Insert

AD1273/PM: Pendant Mount conversion kit (includes top cover)

MECHANICAL

Pan Speed: Up to 200°/sec (1-126°/sec during target acquisition)
Pan Range: 360° continuous
Tilt Speed: Up to 60°/sec
Tilt Range: > 90°
Braking: Dynamic
Connectors: Spring-loaded quick disconnect mechanical coupling, multi-pin electrical connector, and BNC connector
Upper Dome: Plenum steel w/ standard size electric knockouts
Lower Dome: High quality thermoformed optical acrylic
Weight: 19.0 pounds (8.6 kg)

ELECTRICAL

Input Voltage: 24VAC, 50/60 Hz
Power: 20 Watt max
Data Format: AD Manchester Control Code, balanced. Use directly with AD Matrix Switcher/Control Systems or other AD Manchester Control Code Generators

ENVIRONMENTAL

Environment: Indoor
Temp Range: 14° F to 122° F (-10°C to +50°C)
Rel. Humidity: 95% (non-condensing)

B/W CAMERA

Type: Interline transfer 1/2" CCD array
Scanning Area: 6.4mm (H) X 4.8mm (V)
Scanning System: 2:1 interlaced
Horiz Resolution: 500 lines @ center
Min Illumination: 0.22 lux @ f 1.2 (AGC on)
Synchronization: Phase adjustable line lock
Crystal (internal)
Signal to Noise: 48 dB (typical rating)
Video output: Composite video: 1.0 Vp-p, 75 Ω
AGC: >24 dB

EIA Standards
Pick-up device: 682 (H) x 492 (V) pixels
Scanning: 525 Lines, 60 fields, 30 frames
Horizontal: 15.734 KHz
Vertical: 59.9 Hz Internal Sync
60.0 Hz (Line-Locked)

COLOR CAMERA

Type: Interline transfer 1/2" CCD array
Scanning Area: 6.4mm (H) X 4.8mm (V)
Scanning System: 2:1 interlaced
Horiz Resolution: 430 lines @ center
Video Out: 1.0 Vp-p/75 Ω composite
S/N ratio: 48 dB (Typical rating)
Min Illumination: 2.25 lux @ f 1.2 (AGC on)

White Balance: Through the lens (TTL)
Automatic Tracing
White Balance (ATW)

NTSC Standards
Pick-up Device: 682 (H) X 492 (V) pixels
Scanning: 525 lines, 60 fields, 30 frames
Horizontal: 15.734 KHz
Vertical: 59.9 Hz Internal Sync
60 Hz (Line-Locked)

CAMERA LENS:

10X Zoom, 8-80 mm, F/1.2 auto-iris w/manual override

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